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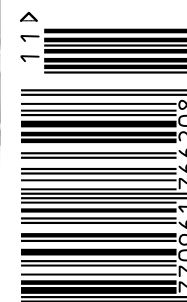
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Chris Frankland.



Early hi-fi amplifiers were nothing if not visually arresting. I carefully avoid saying "exciting" because that's not what many people thought of an early Leak valve amplifier at the time I suspect. The elaborate wooden cabinets of valve radios and then radiograms concealed electronics of the day, in an environment where wood and cloth were the norm. Quad's 22 preampli-

fier tried to change that by adding in a touch of 1950s style, but the accompanying 11 power amplifiers were not for public display. Wind forward and the stark black box – Arcam even made a DAC called Black Box – was touted as a stylistically acceptable successor. What happened to ornament, so beloved by Victorians? Something to engage the eye.

Engage the eye is what McIntosh do with their C8 preamplifier we review in this issue on p10. With its chrome plated valve covers, burnished stainless steel chassis and fluorescent display panel this is an eye-catching design that makes its purpose clear, aided by concealed LED lights. Even the accompanying MC830 power amplifiers get in on the act with their big, illuminated power meters. A feast for the eye and informative too.

Powerful bass is easy enough to produce in a loudspeaker, but combining it with a fast revealing sound, rather than one that labours with heavy lows, is another matter. JBL masterfully manage this with their HDI-1600 that we feature on p18. Readers ask us to recommend loudspeakers with "good bass" and this one is as tight and controlled as they come. Don't miss reading about it.

Another US company that specialises in valves, or should I say "tubes", is Audio Research. In a phono stage that is highly unusual, even unique, they rely on a tube power supply to drive transistors! Which is an interesting way of doing it, shall we say. Add in a tube output stage and here is a way to hear LP like no other. Don't miss our review of their PH9 on p68.



Noel Keywood
Editor

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verdicts

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To ensure the upmost accuracy in our product reviews, *Hi-Fi World* has extremely comprehensive in-house test facilities, and our test equipment - from big names like Rohde & Schwarz and Hewlett Packard - is amongst the most advanced in the world.

Loudspeakers are measured using a calibrated Bruel & Kjaer microphone feeding a Clio-based computer

analyser, using pulsed and gated sinewaves, in a large room to eliminate the room's influence. Pickup arm vibration is measured with a Bruel & Kjaer accelerometer.

No other UK hi-fi magazine has in-house testing, and none has access to such advanced tests across all types of equipment. That's why you can depend on *Hi-Fi World* reviews.



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NEW AMPS...EXPOSED

Just announced by Exposure is the 3510, a £2250 integrated amplifier that “replaces and improves upon” the existing 3010S2D. This neat newbie, alongside a pre-amp (£1,590) and power amps (£1,590 stereo, £2,990 per mono pair) that are due for imminent release, will be packed with “trickle-down technology” from Exposure’s top-of-the-range 5010 series. The 3510 has an 110W (per channel, 8 Ohms, 1kHz, 0.03% THD) output stage with “fast transistors...for dynamic and vivid performance”. Feeding it is a preamp, designed around discrete components, that boasts six line inputs. Internal provision has however been made for an optional phono module (MC or MM, £300) or plug-in DAC (£410). Other features include bi-wireable speaker outputs, a separate preamp output for bi-amping (or external power amps), low-noise power supply, provision for headphones and an AV input with fixed or variable gain for home-cinema integration. All 3510 models are available with black or titanium finishes.

Further details: [Exposure, bit.ly/3jQkjQ0](https://bit.ly/3jQkjQ0)



RE-MASTERED NAD

Intended to form part of a plug-and-play hi-fi system (“just add speakers”) is a V2 update of NAD’s Masters M10 streaming amplifier. New to the €2,999 M10 V2 are support for Dolby Digital Surround decoding, an enclosed IR remote control and “updated gain algorithms”. Inherited from the original model are the large front-panel touchscreen, 100 Watts per channel of ‘HybridDigital nCore’ amplification, an ability to integrate with home-automation systems, ESS Sabre DACs and versatile BluOS music-streaming platform. The latter provides access to streamed or locally-stored music, Internet radio and Bluetooth as well as external sources. So how exactly does the stereo M10 V2 deal with multi-channel surround? NAD explains that an “immersive” 4.0, 4.1 or 4.2 home cinema system (phantom centre) is possible with an optional pair of ‘surround-enabled’ BluOS wireless speakers, located in the appropriate positions.

Further details: [NAD, bit.ly/3thUgF4](https://bit.ly/3thUgF4)

FORM AN ORDERLY QX

The midrange QX range of speakers from Mission, claimed to represent a worthwhile step in performance from budget models, have been revised. In this QX MkII Series are no fewer than six passive models – two standmount speakers (the QX-1/2 MkII, respectively £299/£399 per pair) and three floorstanders (the £799/£899/£1099 per-pair QX-3/4/5 MkII) – plus, for home cinema systems, the £349 QX-C MkII centre speaker and £499 QX-12SUB MkII 330 Watt active subwoofer. The MkII models look similar to the originals, in terms of cabinet size and drive-unit detailing; Mission’s D’Appolito configurations and proprietary IDG (Inverted Driver Geometry) are familiar too. However, Mission has redesigned the stylish top and base-mounted aluminium plates, which are intended to reduce cabinet resonance. Also new throughout the range is Mission’s Ring Dome tweeter, a new design claimed to greatly reduce distortion, and the latest version of Mission’s ‘DiaDrive’ bass/midrange drive unit. All seven models are available in matt black or white, or walnut wood veneer.

Further details: [Mission, bit.ly/3z3z7Qs](https://bit.ly/3z3z7Qs)



TESTING...ONE, TWO, THREE, FOUR...

Teesdale-based Neat Acoustics is one of the few UK hi-fi manufacturers to own its own recording studio - that, we're told, forms a "reference point for the voicing of the firm's loudspeakers". Of these the latest is the £3495 Majistra, which joins the Ministra, Ekstra and Orkestra in Neat's Strata range. The Majistra can be seen as a larger version of the standmounted Ministra, with the top-of-the-range Orkestra's drive-unit line-up. As with other Strata models, the Majistra features 164mm bass-mid drivers in an isobaric configuration, coupled with a ribbon tweeter. The front drivers are mounted on a sub-baffle, and the (non-biwireable) crossover that interconnects them has been hand-wired from point-to-point. The overall result, claims Neat, is the "engaging and convincing presentation of all forms of music". The Majistra is available in black oak, natural oak, American walnut or satin white finishes.

Further details: bit.ly/3nkfuBr



IT TAKES 2

Nearly 15 years ago, Audio-Technica launched its closed-back circumaural ATH-M50 headphones for studio use. As well as being robust, practical and - important if you're mixing for hours at a time - comfortable, the 45mm-driven ATH-M50 happened to sound good too. Its success went beyond professional circles and led to a M50x successor. Naturally, a 'wireless' version was inevitable and the M50xBT arrived in 2018. Fast-forward three years, and there's a revised version of that too. Improvements to the £180 ATH-M50xBT2 include a new hi-res DAC, upgraded headphone amp, AAC/LDAC codec support and 'low-latency' operation for video and gaming. Two 'beam-forming' microphones support hands-free calls and Alexa, although there's no noise-cancellation. Other draws include the ability to simultaneously-pair with two Bluetooth (5) devices, configuration app, Google 'Fast Pair', 'side-tone' and a mute button. 50-hour battery-life and up to 3 hours of emergency use from 10 minutes of USB-C rapid charging.

Further details: [Audio-Technica](https://Audio-Technica.com), bit.ly/3l4RWNZ

A&K T'S OFF

Another desirable audio product to get the upgrade treatment is Astell&Kern's revered A&ultima SP2000 hi-res digital audio player. The firm is quite eager to point out that the new £1,999 SP2000T is the first of its kind to feature an ESS ES9068AS quad DAC, a Replay Gain function (to avoid volume jumps)...and valves. Yup, the SP2000T is probably the first portable audio product to contain glassware since the 1950s! Said valve, the Nutube from Japanese synth king Korg, is a dual-triode that resembles a vacuum fluorescent display. Relative to traditional valves it's smaller, longer-lasting (up to 30,000 hours) and consumes much less power - yet it delivers that much sought-after valve sound. The SP2000T allows listeners to switch between amplification by Nutube, op-amp or a hybrid of the two. It also boasts dual-band Wi-Fi, compatibility with just about every format going, a full-HD touchscreen, quad-core CPU and balanced/unbalanced headphone outputs.

Further details: [A&K](https://A&K.com), bit.ly/3tu2wBX





KEF SQUEEZES IT IN

KEF's Mu3 IEMs (£199) feature a 'specially-tuned' active noise-cancelling function. Despite the Mu3's tiny size and weight (5.8g per bud), connection is wireless (specifically Bluetooth 5) instead of cable, and there's sufficient battery storage within those ergonomic enclosures for 9 hours of continuous use. The latter is extended by 15 hours if you don't forget the case, which has its own USB-C chargeable battery. There's also fast charging, a 5-minute wait yielding an hour's listening. The splashproof Mu3's neat lines are the work of Welsh industrial designer Ross Lovegrove, although a KEF team was responsible for acoustics and engineering. Relevant here are the 8.2mm full-range dynamic drivers, low-latency, support for SBC/AAC codecs, 10m range and 'Ambient Mode' - a safety feature in which microphone audio is routed to the earphones, so that wearers can hear what's going on around them. Four sets of ear-tips are supplied.

Further details: bit.ly/38NlgTD



BURMESTER AT BOTH ENDS

In 2017, German audio specialist Burmester marked its 40th anniversary with a turntable. Not any old disc-spinner, the 175 (yours for a mere £34,600!) featured a four-motor belt drive system. Even more unusually, every part of the 'reference' 175 package is Burmester. Deck, arm, cartridge, power supply and phono stage...they're all made in-house. The 175 will shortly be joined by the as-yet unpriced ("20,000

euros" has been suggested) 217. It's a cost-reduced version (only two motors, for example) but, at 31.5kg, still pretty substantial. Accounting for much of this is the solid aluminum body, which aims to reduce unwanted resonances. The two-speed 217's gimbal-mounted composite-fibre tonearm is just over 9 inches long, and fitted with a Shibata-crowned MC cartridge. No phono stage is included, but the package is topped by a composite-leather slipmat. At the opposite end of the reproduction chain are Burmester's equally-distinctive £97,500-per-pair BC150 speakers. Based on the existing BC350s, each 200kg BC150 features two AMT tweeters, an 18cm midrange driver and a 32cm woofer in a bass-reflex configuration.

Further details: *Burmester 217*, bit.ly/3hfKEWC; *Burmester BC150*, bit.ly/3ySaa5r.



BATTY ABOUT TUBES

Hailing from Wilmington, Delaware is the \$10k VK-80i integrated amp from Balanced Audio Technology (BAT to its friends). Four distinctive-looking 6C33C-B output triodes, which invitingly-glow at you from the top-plate, are capable of delivering 55 Watts per channel of power to your speakers. BAT chose the 6C33C-B over the 6550/KT90 tetrode that's "used in most traditional tube integrated amplifiers" because it offers "many times the current delivery" and is thus more capable of driving 'difficult' low-impedance speakers. BAT has endowed the "fully-balanced" VK-80i with automatic-bias circuitry that compensates for varying mains voltage and aging tubes. The VK-80i has four line inputs, one of which is balanced XLR. Other features include remote control, a 90-step resistive-ladder volume control and toroidal transformers for both mains and output.

Further details: bit.ly/2X9KKZI

MUSIC BY CANDLELIGHT

Described as a Bluetooth-enabled "glass sound speaker", Sony's visually-distinctive £315 LSPX-S3 seems like something audiophiles should avoid... until we're told that said glass is used in an "organic" tweeter, enabling the LSPX-S3 to reproduce "crystal-clear sound". This top-mounted cylindrical tweeter employs 'Advanced Vertical Drive Technology'; three 'actuators', attached to one end of the glass, vibrate to "spread sound in every direction". Within the tweeter is a mood-light that "flickers like a candle", helping the speaker to blend into any interior. As well as the unusual tweeter, the LSPX-S3 features a 46mm woofer and a passive radiator in its base. If the latter don't give you enough low-end clout, Sony has provided a 'Bass Boost' mode that can be engaged with its 'Music Center' app. Also on offer are an 8-hour battery life, sleep timer, hands-free mode, LDAP support and the ability to deliver stereo when used in conjunction with another LSPX-S3.

Further details, *Sony*: bit.ly/38lyi4v



Power Plant

Wonderfully designed and built, the C8 pre and MC830 power amps from McIntosh intrigue Noel Keywood.

So, where did we get to with the power station design ethic? In London it is Battersea; in New York it is McIntosh! That's their home town and the C8 preamplifier (£4295) and matching MC830 mono block power amplifiers (£4995 each) deliver big power old-style.

But whilst their style draws from the past, inside these amps are mostly new-tech – more silicon junctions than thermionic heaters. And definitely no coal fired boilers!

The MC830 is all solid-state, having lines of output

devices bolted to big heatsinks a peek inside showed, in what is likely classic Class A/B working using what I suspect are power FETs with strong feedback. I say this from the sound and from measurements of bandwidth and damping factor. No tubes here.

The C8 preamp is a hybrid, although McIntosh avoid saying so. You can't, however, squeeze an MM and MC phono stage plus line amplification from four 12AX7 tubes, and an MC input must use transistors or a transformer to avoid hiss. Another peek inside showed a well packed solid-state

board just behind the phono inputs but I couldn't identify the small Surface-Mount devices being used, likely NE5534s.

That then is a flavour of the basic topology of the system I'm reviewing here. The tubes provide line amplification and the C8 may well be pure tube from unbalanced (phono-socket) line input to unbalanced line output, but the balanced ins and outs probably go through solid-state conversion circuits and the phono stages are solid-state throughout. The tubes are there to provide their sonic flavour – a sense of depth – and



also as a visual link back to tube amps of yore that McIntosh have a reputation for.

Leverage that reputation and

black box here, instead a visually vibrant preamplifier that has something to say – by light signals.

As you'll have guessed, the

"a large, spacious sound that, for example, sent Mars thundering into our room from the LSO playing The Planets"

you come up with C8's styling, where the 12AX7 (ECC83) double-triode tubes (valves) in their chrome-plated cages take precedence. To add some visual spice, their weak glow is supplemented by LEDs in the valve base that light orange during warm-up, changing to green when it's good to go. The light display is garish but attractive at the same time: no

C8 preamplifier has line inputs, two in unbalanced (phono socket) form. There is also a single pair of balanced (XLR socket) inputs that I used to hook up our CD player. Then there are separate Moving Magnet (MM) and Moving Coil (MC) inputs for turntables, both via unbalanced phono sockets.

Missing on our C8 were digital inputs: a separate DA2

Digital Audio Module board can be installed to provide electrical and optical S/PDIF inputs, USB for computer connection and HDMI for ARC audio return channel from TV. Unfortunately, Bluetooth radio connection from a mobile 'phone is absent.

Press Power on the C8's remote control and it pops into life after a 16 second warm up. Curiously, pressing power again did not shut it down, effecting a re-start instead. To shut down I had to walk over and press the volume control knob in. In our set-up the control lines were





The 12AX7 double-triode preamplifier valves (tubes) provide line amplification and drive to the power amps. Note the green glow.

unconnected so the power amps had to be turned on and off separately, but C8 can be connected to control the MC830s. Power-off circuits operate after 30 minutes of silence, but they can be defeated.

If you've got the feeling at this point that the C8 is no simple preamp, you'd be right. Hidden away inside are tone controls, a balance control and gain trim controls. Standard gain is x5 (14dB) but double going from phono in to XLR out.

With the Phono (turntable) moving magnet (MM) input selected, gain and capacitance values can be trimmed, the latter from 50pF to 400pF in 50pF steps. Not much need for this nowadays, but generally higher values raise



At switch on LEDs beneath the valves light up intense orange to indicate warm-up is taking place.

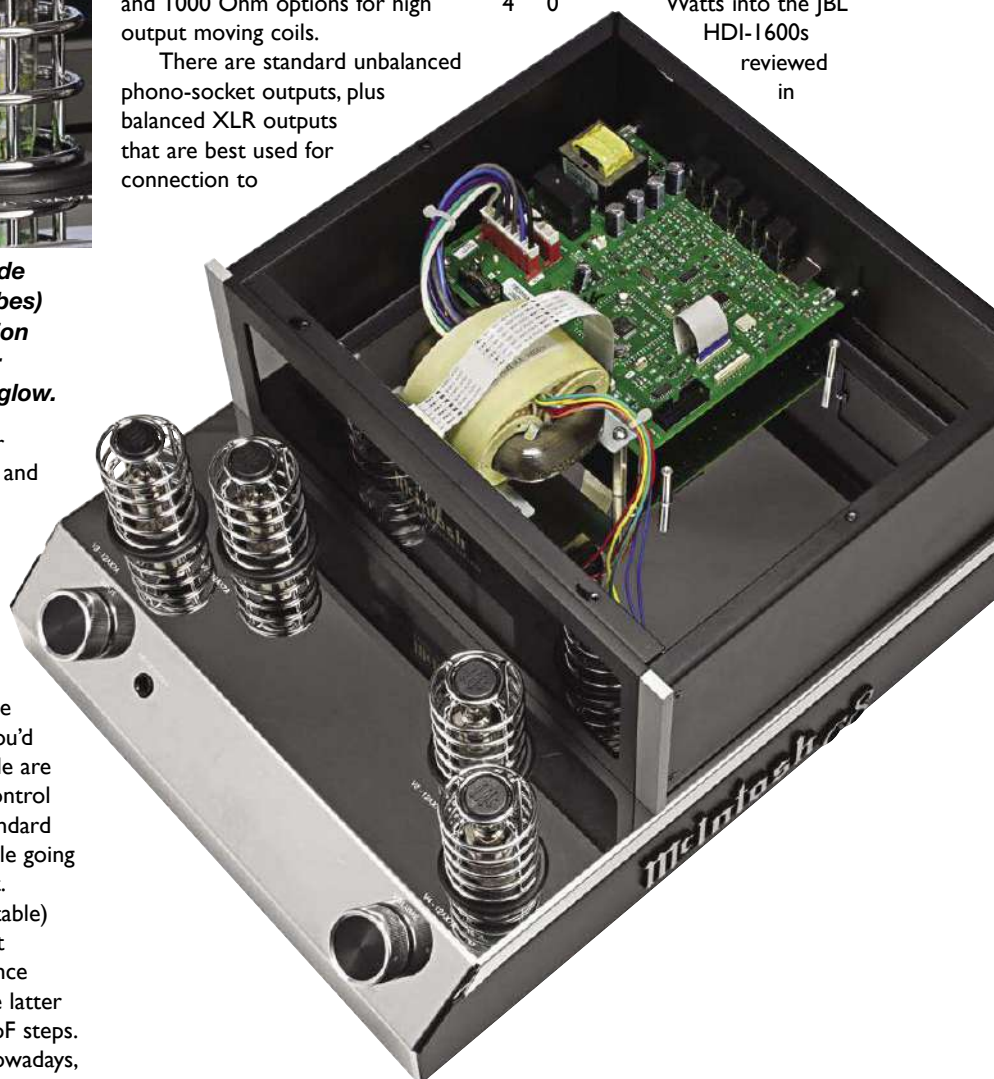
upper midband and reduce high treble.

Switching to moving coil (MC) input, loading and gain can be adjusted. Loading values run from 50 Ohms to 1000 Ohms, with a standard 100 Ohm option, plus 400 and 1000 Ohm options for high output moving coils.

There are standard unbalanced phono-socket outputs, plus balanced XLR outputs that are best used for connection to

fitted drive circuits to make these analogue meters – with genuine needles – show true peaks or the maximum reached. At huge volume level, only sustainable for minutes in my terrace house before knocks on the door – I got up to around

40 Watts into the JBL HDI-1600s reviewed in



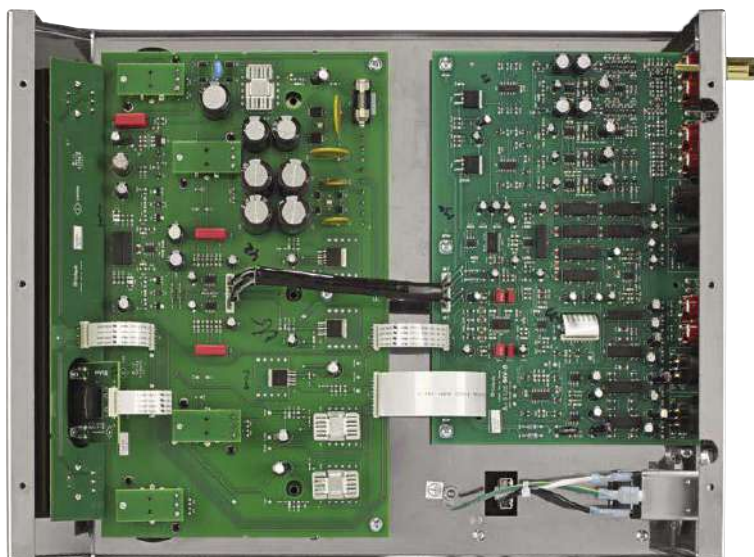
power amplifiers.

Size wise the C8 is high, measuring 200mm. That put it onto our bottom rack shelf, set to accept power amplifiers. The bright, blue LED display carries volume control level as a percentage value and it was clear enough 16ft away. Measuring 312mm wide and 413mm deep the C8 was otherwise acceptable, and at 8.2kg easily movable.

"Easily movable" is not what I'd call the MC830 power amplifiers though, weighing in at 21.8kg apiece. We manoeuvred them with care, placing each one on the floor as a sturdy platform. Centre piece of each is a massive, illuminated blue power meter that shows power output – and very interesting too. McIntosh have

Inside the C8 lies a big linear power supply with quality C-core transformer and a circuit board packed with solid-state parts for control and display. At top a small stand-by supply transformer.

this issue. Nice to have some idea of what is going on though and McIntosh put effort into getting the meters right: they can be seen from a distance even at night – and warn of cone landing in lap. Lack of a red/black polarity markings on the loudspeaker terminals was unfortunate; there are only small legends on the chassis. Otherwise, the MC830s are attractively finished in a shiny stainless steel chassis measuring 312mm wide, 241mm high and 413mm deep.



Underside of the C8. Valves sit on the front board (at left), mounted on four small daughter boards. The rear board (at right) carries relays and audio circuits. The MM and MC phono stages lie at top right, close to the gold plated earth terminal.

SOUND QUALITY

The system was hooked up to our reference Martin Logan ESL-X hybrid electrostatic loudspeakers and alternatively to more conventional JBL HDI-1600s reviewed in this issue. As a source I used our Oppo BDP-205D as a CD player, connected by Chord Company Epic XLR cables and it also acted as a hi-res DAC fed optically by a battery powered Astell&Kern AK120 player.

The phono stages were fed by Audio Technica OC9X SH moving coil and a VM750 SH moving magnet cartridges, mounted

alternately into an SME309 arm on Timestep Evo modified Technics SL-1210 Direct Drive turntable.

The simple instrumentation used in the Pink Panther theme well demonstrated the basic nature of the MC830s: the sax loomed large and was crisply rendered, having plenty of top-end definition and force. The slow bass line was solid and well timed. The sound stage in particular came over as spacious and clear, making the orchestra generously scaled. That the '830s had power was obvious at low levels and very obvious as volume was wound up where they

maintained their presentation and composure.

To be quite specific about it, these are not warm, easy or cuddly amplifiers so much as intensely detailed "high speed" power amps with lots of attack. With my treble power test track, Nils Lofgren's Keith Don't Go, the strings weren't just vivid bordering onto vicious, they had more body than I'm used to. With classical the open nature of the sound stage made for a large spacious sound that, for example, sent Mars thundering into our room from the LSO playing The Planets.

Absence of a warp filter or any form of LF roll-off was apparent when spinning 12in 45rpm singles like Alison Goldfrapp's Ride a White Horse, where there was thunderous deep bass. Even with normal 33rpms like Dire Straits Ride Across the River the halting



At rear the C8 preamp carries balanced XLR and unbalanced phono-socket inputs and outputs. The panel at left is a blank, replaceable with a digital input board option. MM and MC Phono inputs are at far left here.

Reggae bass line came over as eerily clear, crisp and powerful. It was here that I best got a sense of depth to the sound, as well as sheer scale, helped by grippy bass. Also there was stinging power in cymbal strikes from the HDI-1600 horns.

In all then a big, muscular sound that was a notch up on digital, making for an exciting listen. With the OC9X SH there was a more open sound as you'd hope for from MC and slightly drier bass I fancied but still a top notch presentation with real guts to it.



Large power supply smoothing capacitors at centre and big heat sink apertures at left and right on the MC830 chassis underside.



Every note. Every word.
Every detail.



LS50 Wireless II - The Ultimate Wireless HiFi

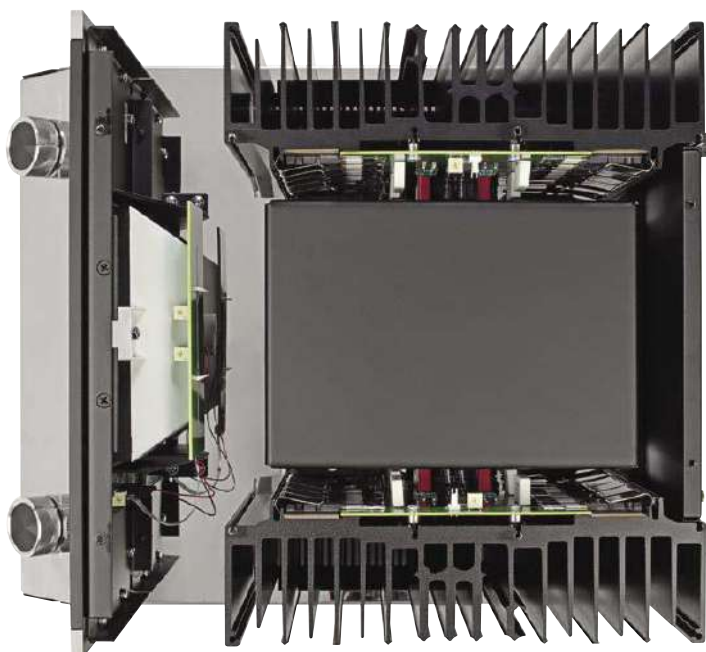
When you first listen to the new LS50 Wireless II, close your eyes. You'll find it hard to believe that a sound so pure is coming from such compact wireless speakers. That's because our unique Metamaterial Absorption Technology (MAT™) eliminates the high-frequency distortion inside the speaker. So keep your eyes closed and keep listening; there's a whole world of streamed music to enjoy.

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KEF 60 YEARS



At centre a steel screening case covers the mains transformer. The exposed-fin heatsinks carry lines of power output devices. At left the power output meter unit.

The long echoes surrounding Jackie Leven's invisible woman in Young Male Suicide swirled around her in eerie fashion to an extent I've not been made aware of before: there was superb insight.

CONCLUSION

Although the styling might hark

back, the sound of this amplifier combination proved anything but old-fashioned. The presence of tubes added no warmth either: quite the opposite this amplifier combo was vividly fast, detailed and insightful. Think of it as a hair trigger fast power house with

spacious sound staging and you have an encapsulation. A sound as big as a power station then, and fabulous with LP especially. Well worth hearing. I was mightily impressed.



At rear each MC830 has unmarked output terminals. Polarity is shown on the case beneath, in white lettering.

MEASURED PERFORMANCE

Each MC830 monoblock produced 380 Watts into an 8 Ohm load, increasing to 600 Watts into a 4 Ohm load. Most loudspeakers are now nominally 6 Ohms, into which output is 450 Watts. A 0.06 Ohms output impedance gave a high damping factor of 133. These are massively powerful amplifiers then.

Frequency response measured flat from 6Hz up to 66kHz as our analysis shows, unaffected by load value.

Into purely resistive loads distortion values were low at 0.002% at 1kHz 1W, falling to 0.0005% near full output. At 10kHz the figures were also low, just 0.01% at 1W and 0.003% near full output. Adding in loudspeaker inductance (1.2mH air cored coil) high frequency distortion remained unaltered.

The C8 has a gain of x5 (14dB) balanced in/out and unbalanced in/out, but x10 (20dB) unbalanced in/balanced out, a likely method of use with a balanced-input power amplifier.

Both MC and MM inputs have accurate RIAA equalisation, frequency response measuring flat to 20kHz, albeit with slightly less LF gain via MC as is common, giving a -1dB point at 20Hz

where with MM it was 10Hz. Gain from Phono in to XLR out measured 80dB (x10,000) with MC, or a standard 60dB without preamp gain of 20dB factored in, and MM was x10 less, again as is usual. Noise for MC was very low at just 0.07µV equivalent input noise (A wtd) making hiss inaudible in use.

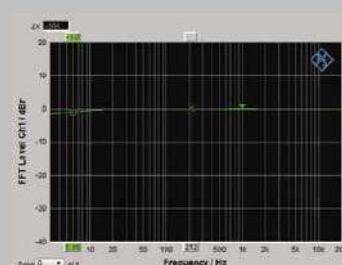
Both the MC830 power amplifiers and C8 preamplifier measured well in all areas, having no weaknesses at all. **NK**

Power (8Ω)	380W
Frequency response	6Hz-66kHz
Distortion (10kHz, 1W, 4Ω)	0.01%
Noise (IEC A)	-98dB
Sensitivity (XLR/phono)	4V/2V
Damping factor	133
C8 PREAMP	
Frequency response	5Hz-100kHz
Distortion	0.012%
Gain	x5 (14dB)
Noise	-97dB
PHONO MM	
Frequency response	10Hz-20kHz
Distortion	0.018%
Gain	x110 (41dB)
Noise	-69dBV

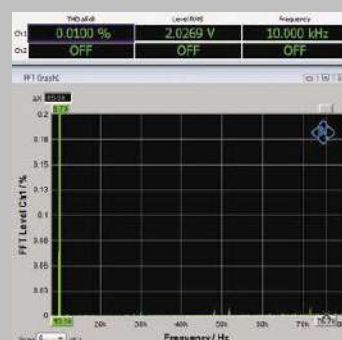
PHONO MC

Frequency response	20Hz-20kHz
Distortion	0.02%
Gain	x1000 (60dB)
Noise	-64dBV

FREQUENCY RESPONSE



DISTORTION



**MCINTOSH C8
PREAMP £4295**

**MC830 POWER
AMP £4995**



**OUTSTANDING - amongst
the best.**

VERDICT

Big, fast power house
amplifier with deep insight.
Great with LP too.

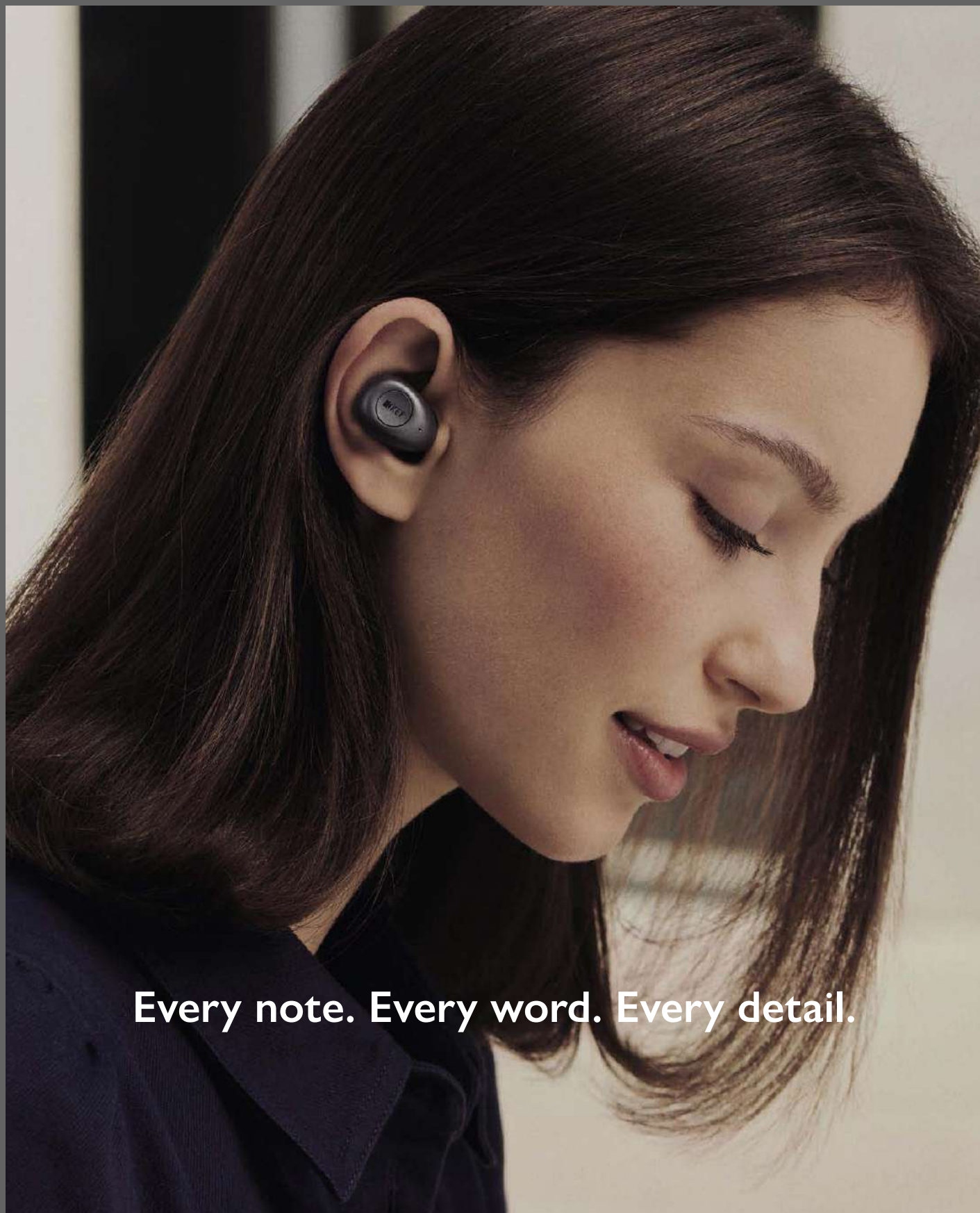
FOR

- powerful sound
- spacious staging
- deeply detailed

AGAINST

- bulky and heavy
- no digital as standard
- no Bluetooth

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www.blackrhodium.co.uk

Here's your chance to win Black Rhodium's Waltz S loudspeaker cable, reviewed in our July 2021 issue. Read the review excerpt below and answer the questions.

"The Waltz S benefits from tightly-braided screening that's used to reduce the "distortion effects of high-frequency interference". Likewise, from such consideration Nalty explained that there are "additional screens to reduce RFI/EMI".

Like the original Waltz, the 'S' version is fitted with the GN-

I "Straight Line Contact" 4mm banana plugs, which are claimed to deliver "cleaner" sound than traditional ones made with "full circumferential contact" (spade terminations are also available). These plugs, unavailable elsewhere, feature a screw that clamps to the cable's outer insulation.

They are specially manufactured to Black Rhodium's specifications. Rhodium-plating of the signal pins (and spades) ensures a cleaner and less corrosion-prone contact, the benefit being a "livelier and more exciting sound". The conductor is attached to the plug by a tightly-crimped ferrule

to ensure intimate contact; also inside the plugs are small ferrite beads that are intended to prevent high-frequency interference from being transmitted through the cable. Plenty of interesting design factors, then; "Waltz S" I was told, "is essentially the sum of its parts, assembled in a way that gives customers the very best sound for their money".

The build quality of these cables, which are covered by an unusual woven jacket, befits the not-inconsiderable price".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 11th November 2021 to:

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QUESTIONS

[1] Screens reduce:

- [a] RFI/EMI
- [b] light penetration
- [c] moisture ingress
- [d] vibration

[2] The banana plugs are -

- [a] Light Contact
- [b] Straight Line Contact
- [c] Erratic contact
- [d] Soft contact

[3] Rhodium plating ensures -

- [a] good insulation
- [b] ohmic properties
- [c] low weight
- [d] less corrosion

[4] The ferrule is -

- [a] welded
- [b] brazed
- [c] crimped
- [d] glued

RULES AND CONDITIONS OF ENTRY

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- MULTIPLE ENTRIES WILL BE AUTOMATICALLY DISQUALIFIED
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AUGUST 2021 WINNER: ESPRIT RCA CABLES
Mr. Edward Marritt of East Yorkshire



Hard Rock

Want a gutsy sound? Listen to JBL's HDI-1600 loudspeakers says Noel Keywood.



With a reputation for big Rock loudspeakers USA style – those monsters you see at concerts and such like – expect

JBL to come up with a sound that's got energy and life to it in their less ambitious domestic 'speakers. Look closely at those giant concert arrays and notice they project sound forwards through horns; look at their new stand-mount HDI-1600 (£1600) I am reviewing here and see the similarity. Its front baffle is dominated by a treble horn. Good or just loud?

From my long experience of JBL loudspeakers I expect them to be more thunderous than subtle, but whilst UK loudspeaker designers rush as a herd to raise treble nowadays, in Germany and the USA – perhaps mindful of ever more sophisticated Far East markets – there's greater emphasis on accuracy. And that's what I bumped into here, albeit with JBL's own way of achieving it.

Dominating the front panel is the acoustic horn of the treble unit, that they say uses "patented High-Definition Imaging (HDI™) waveguide technology". Behind lies a 1-inch (25mm) compression driver, also patented. It has a "lightweight polymer diaphragm

with improved high frequency extension due to reduced mass". A V-shaped geometry reduces breakup modes, time smear and distortion". Acoustically, such a horn couples the dome of the driver into a bigger air load, placing more stress on it. But it also does more work, here running down to 1.9kHz they say, and our



JBL's 6.5in bass/midrange drive unit with aluminium matrix cone that, they say, "avoids breakup modes, providing true pistonic motion".

measurements confirmed this. The importance being this lower crossover frequency improves phase matching, making the two drive units sound better integrated.

Below the visually prominent horn lies a 6.5in (165mm) bass/midrange drive unit with "aluminium matrix cone" able to reach smoothly up to the 1.9kHz crossover frequency. The rigid diaphragm avoids breakup modes, providing "true pistonic motion", JBL tell us. It is acoustically loaded by a rear port to extend bass downwards.

The drivers and crossover sit in a sturdy braced cabinet weighing 10kgs – heavy for the size. Ours came with satin Grey Oak veneer that looked none too natural with its conflicting grain flows top-to-sides and bland patterning that appeared artificial. There is a darker Walnut – or Gloss Black that avoids grain matching issues.

The cabinets measure 370mm high, 230mm wide and 300mm deep overall. This includes the front grilles that use a light open-weave cloth over an open plastic frame that had no affect upon treble

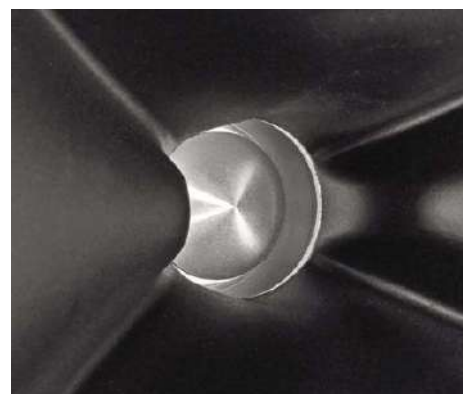
output at all, all the way up to 20kHz. The frames attach by magnets.

At rear is the port and a bi-wire connection panel with shorting links for mono-wiring. The terminals accept 4mm banana plugs, spade terminals or bare wires.

SOUND QUALITY

As always the JBLs were run in for 48 hours to ensure the materials and motors had some time to stabilise into normal running condition. They were driven by our Creek Voyage iA20 amplifier, via Chord Company Signature Reference screened cables. Sources were an Oppo UDP-205D universal player acting as a CD transport, digitally connected by QED Quartz glass optical cable to the Creek's internal AKM DAC. I also used Bluetooth fed by the Hi-Res section of an Onkyo HF Player app. on an iPhone 11X Pro that, measurement shows, gives 24bit resolution.

Spinning a wide variety of CDs with high dynamic range (uncompressed) showed the HDI-1600s were – in essence – full bodied, rich and powerful. Let me start with what was thankfully missing – treble screech. At no



The metal dome within the horn loaded high frequency compression driver. It works over a wide frequency range, with very strong output at 20kHz our measurements showed.

time did the JBLs challenge my ears. I slightly suspected I'd hear the peak at 20kHz as a thin sonic needle on the rare occasion there's anything musical so high up, but no sign. Even with the challenging Keith Don't Go, where the cutting close-miked guitar strings of Nils Lofgren whistle out like bullets, the JBLs sounded relaxed and smooth. The fast action of fingers punishing strings was there, but in natural balance rather than artificially emphasised. The JBLs threw it all at me but I didn't cringe – just as it should be.

What you get here is not only smoothness and tonal accuracy, but a rich sound. Josefine Cronholm's In Your Wild Garden had her voice large and well composed centre-stage, dense and full of detail. She was aligned back in the plane of the speakers, rather than being thrown out – in spite of the horns. And there was a reason. The HDI-1600s work hard for a living and come over as a bit tubby: a lot of bass is being generated by a small cabinet. Similarly, horns can have their own megaphonic shout. These effects together made music come from the 'speaker, rather than from a place outside of it. To some small extent this reminded me of Tannoy's: except they conducted matters on a grander scale!

There's a historical link in there and I cannot help but wonder if someone at JBL has said "hey, let's go back to our roots" but do it better. All of which is to say the HDI-1600s are hard rocking power houses that can really pound it



Bi-wire terminals with removable links sit on the rear panel, together with a port that reflex loads the bass unit.

out, as I found out when running Daft Punk's synth driven Giorgio by Moroder that gave them and my listening room a low frequency workout. I didn't put ZZ Top on, but felt they would be a perfect fit.

Instead, I played the Eagles 'Somebody', a horribly compressed track that has around 3dB dynamic range; the JBLs seemingly stretched out dynamic scale by giving kick drum obvious weight to bring life to the low end. Further up the scale there was a slightly relentless harshness, but perhaps this was the 'speakers making obvious the limitations of the recording. They are a revealing 'speaker so you get warts'n'all with older material – and what went on in the past wasn't always lovely (cough!).

I could listen to and enjoy old faves, with the reservation that

DSD or a modern 24bit recording all was fine, but as I noted with old Rock recordings, blemishes were ruthlessly revealed rather than glossed over.

CONCLUSION

If you want a compact but powerful loudspeaker, with bass drive and grip that belies package size, JBL's HDI-1600 is the one. With a technical performance almost ruthlessly correct it puts its feet down with perfect



JBL's custom-designed stands are light yet strong, and come with optional floor spikes.

"Ruthlessly correct, it puts its feet down with perfect accuracy – but they're big feet! This is no shrinking violet"

accuracy – but they're big feet! This is no shrinking violet but a big, bold rocker designed for excitement. More accurate than most around it, and with more sheer drive, it will appeal to all those who like Rock painted large. An impressive loudspeaker worth hearing.

the info and detail being sent to me was less than honeyed. And with Gerry Rafferty's Moonlight and Gold I did start to hear thin sibilants from the words "watch" and "sometimes". But with their generous sense of power the HDI-1600s still rocked along with vigour. This bode well for Safri Duo's Samb Adagio, the metronomic synth beat showing JBL have engineered a loudspeaker that holds pace cleanly whilst delivering solid lows, giving a meaty sound.

Classical fared well too, the vivacious strings in Vivaldi's Concerto in D minor, Opus 4 No8 (DSD 64) coming over as natural in balance, smooth and easy. Absence of treble lift ensured strings did not rasp at me. With Handel's Love and Madness, Lascia Ch'io Pianga sung by Johannette Zomer put her vocals in a nice clear space, with no sign of blemish. It's a lovely piece I enjoyed greatly through these loudspeakers.

As a general observation, with classical I found the HDI-1600s correct rather than luscious; the horn has a hard driving quality that's not especially suited to the classical milieu. Given smooth

MEASURED PERFORMANCE

Our third-octave, pink-noise frequency response analysis (grille off), with microphone slightly off-axis shows a smooth and flat response down to 50Hz. Low frequency output lifts slightly below 400Hz to ensure the sound has some body and output rolls off smoothly to -6dB at 40Hz.

The port peaks at 50Hz our impedance analysis shows, to add to low frequency output, as shown by the red trace of port output in the response graph. The HDI-1600 runs strongly down to 30Hz and cuts off sharply below this frequency, matching the energy balance on most commercial CDs.

The steep peak at 20kHz is a peculiar effect rarely if ever seen and it was unaffected by the grille and also by positioning the microphone off axis. In practice the horn treble unit has wide, smooth dispersion, making listening position uncritical. A peak at such high frequency will rarely be sonically apparent. This driver covers a very wide frequency band, crossing over at 1.6kHz the impedance trace shows. Lack of resonances suggest clean upper midband and treble.

Overall impedance measured 6.5

Ohms with pink noise, the bass unit having 3.8 Ohms d.c.r. Sensitivity was good at 86dB from one nominal Watt (2.8V) of input, meaning a 60 Watt or so amplifier is needed to go very loud.

This is a very well engineered speaker designed to be smoothly accurate and, with well maintained output right up to 20kHz, a detailed sound. **NK**

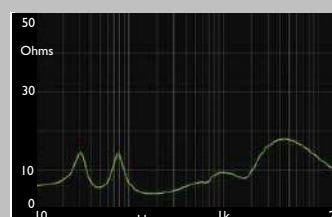
FREQUENCY RESPONSE

Green - driver output

Red - port output



IMPEDANCE



JBL HDI-1600 £1600



EXCELLENT - extremely capable

VALUE - keenly priced

VERDICT

Muscular and exciting, if a little over-whelming at times.

FOR

- muscular bass
- accurate tonal balance
- fast detailed treble

AGAINST

- slightly hard tone
- a tad tubby
- veneering

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MCINTOSH C8

Valve Preamplifier

£4,295

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Initial 20% deposit of **£859.00**, then
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With its beautiful open chassis design, a wide range of inputs, tone controls, phono stage, headphone amplifier and optional next-generation DA2 digital DSD512 module, the McIntosh C8 offers incredible value, with a performance to match.



MCINTOSH MC830

Mono Amplifier, pair

£9,990

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Initial 20% deposit of **£1,998**, then
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Combining beautiful design and a gorgeous fast-responding Dual Scale Watt meter, the 300wpc McIntosh MC830 mono power amplifier delivers breathtaking performance from even the most demanding loudspeakers.



*0% Finance examples above are subject to status & conditions



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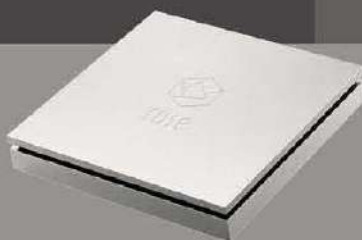
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Beauty in Sound

Martin Pipe enthuses about Hifiman's Sundara planar-magnetic headphones.

The Sundara – Sanskrit for ‘beautiful’ apparently – from Chinese manufacturer Hifiman is a step-up from the excellent Deva model we reviewed a couple of months back. It sells for the same £299, but the 372-gram Sundara has a more luxurious finish and sits in the lower echelons of Hifiman’s surprisingly-large ‘reference’ range; the Deva occupied the less-prestigious ‘premium’ category. However, you don’t get the Deva’s innovative plug-in Bluetooth dongle. Neither is there a protective carrying case, but the Deva wasn’t supplied with one of those either. Here we review the latest 2021-model Sundara, and not its physically-similar 2018 predecessor.

Like the Deva, the Sundara is an open-backed circumaural design of lowish 94dB (1mW @ 1kHz) sensitivity. This is however generally expected from headphones with planar-magnetic (PM) drivers, like the ones favoured by Hifiman’s engineers. It’s alas the price you pay for the clarity and openness associated with the technology.

Given their shared ancestry, it comes as no great surprise to learn that the Sundara’s 80mm 37 Ohm PM driver also boasts a patented ‘Neo Supernano’ diaphragm similar to that fitted in the Deva. This, Hifiman claims, has the “width of a human hair”. Lighter than usual, yet boasting high tensile strength to resist breakup, the diaphragm is embossed with the signal-carrying

voice-coil and sits between two powerful magnets. They interact, causing the diaphragm to move in time with your music – a different approach to the more conventional dynamic driver where an air-shifting diaphragm is coupled to a wirewound voice-coil surrounded by a magnet, as

in conventional loudspeakers.

These transducers are mounted in large, jet-black aluminium enclosures, with neat wire grilles that protect the drivers whilst preserving the open characteristic (you can faintly see the driver’s magnet arrays through them).



With the foam earpads removed the Sundara’s 37 Ohm drivers are laid bare. Larger than usual, with a diameter of 80mm, each driver contains a patented ‘Neo Supernano’ diaphragm with a thickness “between 1 and 2 microns”. The metallic printed patterns of the voice coils, which interact with magnets mounted on either side of the diaphragm, are also visible.

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They connect to the adjustable headband via robust channel-identified yokes, and are fitted with replaceable earpads that are covered by a mix of cloth and synthetic leather. The supplied 1.5m lead plugs into both earcups via 3.5mm TRS plugs, opening up the possibility of switching to balanced operation via aftermarket cables. The supplied cable is, like the Deva's, unbalanced and terminates in a 3.5mm stereo jack plug.

Despite its size, the Sundara is comfortable to wear for hours at a time. The adjustable headband, with its 'weight-dispersal strap', is effective here; the pressure placed on your ears is far from excessive. As with other open headphones, though, external sound leaks in all too easily. The Sundara can struggle to compete with energetic gym ambience and Tube noise; similarly, your musical tastes will be evident to anyone sitting nearby. Headphones of this type, it has to be said, excel when listening in quiet rooms. Should you indeed be listening 'on the move' with a personal player, though, another practical point is that the solid right-angled 3.5mm plug tends to snag in pockets.

PERFORMANCE

Hifiman is of the belief that its Sundara shouldn't challenge headphone amps, and in its opinion even the output stages of mobile phones are fair game. I'm not sure I agree. Although an Astell&Kern SR25 personal player and Prism Callia headphone-DAC successfully drove its transducers, the volume had to be turned up noticeably higher. The memorable hook of NZCA Lines fine 2016 synthpop outing *Two Hearts* (from *Infinite Summer*) sounds dirty even on a good system. Driven via my Google Pixel 3a smartphone, though, that hook sounded even grittier; deep basslines showed similar signs of stress. Furthermore, I found the Sundara to be fairly warm-sounding until broken in – a process that can, according to Hifiman, take up to 150 hours. Until then, there was also a tendency for the instruments lurking at this end of the frequency scale to sound rather similar.



The 1.5m cable is terminated in an unusually-long right-angled 3.5mm stereo jack plug that can snag on clothing if you're using a portable player - handling noise can be a problem too. On the plus side, a 6.3mm adaptor is provided for full-size headphone jacks. At the other end of the cable are 3.5mm TRS plugs for each earcup - the left and right channels are identified. The use of detachable cables makes upgrades (and even balanced connectivity) practical.

Thankfully, this disappeared and I was left with a far more neutral character. Having said that, slight but perceptible treble emphasis favours some elements more than others. The bite of electronic music's synthetic high-hats and snares was more apparent. Saxes too, among them the tenor line that runs through – appropriately enough, Kate Bush's *The Saxophone Song* (The Kick Inside) – were easy to follow among the other elements of the track. Indeed, one of the Sundara's strong points is its almost-analytical resolution of detail. The breathing of the saxophonist (in this case, jazzman Alan Skidmore) was as apparent as the highly-complex combination of harmonics that gives his instrument its distinctive timbre. A check out with Simon and Garfunkel's *America*, there was a welcome absence of the blurring that can merge the individual performers' contributions.

When listening without visual cues (i.e. seeing the musicians) you have to rely not only on the skills of the recording engineer, but your equipment's ability to get across the subtleties. In this, the Sundara was surprisingly capable. It was even able to highlight the difference between 16 and 24-bit versions of the

same music – more 'space' is evident in the latter. In this regard, the Sundara performs astonishingly-well for sub-£300 headphones. An expansive but credible stereo image is conveyed, even from complex orchestral/choral works like Britten's *War Requiem* (Noseda/LSO/LSC/Eltham College Choir) a 24-bit recording that also reveals the Sundara's dynamic capabilities. Bass-heads should note that the emphasis is on quality rather than quantity. The kick drum and bass guitar of Doves' *Cathedral of the Mind* (The Universal Want) have definite impact, but keep their place within the mix.

CONCLUSION

To the man in the street £300 will sound like a lot of money to splurge on a pair of headphones – unless they come from the reassuring famous names in big-tech. Yet, for its comparatively low asking price the Sundara gives you a little taste of what high-end planar magnetic 'phones are capable of. And here brands like Audeze set the pace with prices far above the Sundara. I would compare them with cans selling for as much as £500 or so, but the need for a good headphone amp remains, as always with planar magnetics.

HIFIMAN SUNDARA £299



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

Couple with a capable headphone amp or personal player, and prepare to enjoy!

FOR

- detail and musicality hard to match at the price
- comfortable and practical
- upgradable

AGAINST

- no carrying case supplied
- needs drive to avoid audible strain
- right-angled 3.5mm plug awkwardly-long

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LETTER OF THE MONTH PRIZE

Mail



Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of KEF Q150 bookshelf speaker

Answers by: **NK** - Noel Keywood; **PR** - Paul Rigby; **MP** - Martin Pipe; **DT** - Dave Tutt; **JP** - John Pickford.



WHARFEDALE DIAMOND 12.1 BOOKSHELF SPEAKER

<https://www.wharfedale.co.uk/diamond-12-1/>

[subject to availability - Black/Light Oak/Walnut/White]

A PAIR OF WHARFEDALE 12.1 LOUDSPEAKERS are on their way to DONALD HAWKINS, Letter of the Month winner in our October 2021 issue.

Letter of the Month



"I like the Matrix sound and its comprehensive feature set, so I contacted Matrix support directly (China)" about the app problem, says Tim Jury.

ANDROID ISSUE

Your review of Arcam's ST60 in your Oct 2021 edition caught my eye. Its feature set sounded very like the Matrix Element X that I bought earlier this year, although the Matrix has extra play back features such as a microSD card facility, a linear power supply, plus an excellent headphone amp. Consequently it's

a more expensive product, but it's not immune to the same awkward placement of the USB and microSD ports, on the rear panel. It also has three methods of control, an in-house developed app (both for Android & iOS), a metal remote control and front panel controls.

When the Element X first arrived I tried to connect it to my Synology

NAS drive, where I store my ripped CDs and downloaded music files. This involved installing the Matrix App on my (Android) phone and following the instructions. After several failed attempts, I phoned my dealer for assistance. He kindly arranged for his Networking expert to call me, but unfortunately this exercise also failed to identify the problem. Next

I borrowed an old iPhone, installed the Matrix App, and – bingo! – it connected immediately. Bizarrely, my Android phone then also connected.

Some issues continued and several weeks later, by which time I'd had a new mother board fitted, then eventually, a completely new unit, the Android problem was still there. Now I did have the opportunity to return the unit to my dealer for refund, but I like the Matrix sound and its comprehensive feature set, so I persevered and contacted Matrix support directly (China). After a few weeks they confirmed they had identified a bug in their Android App, relating to the use of a hashtag symbol within my NAS password. This will be corrected in their forthcoming comprehensive update, or so I am told. I hope so because frankly, and by their own admission, the Android version of their app is a poor relation to the iPhones. I am actually very surprised they choose to release it, after all the Element X is a premium product. In fact the mconnect app provides a better user experience and that's not exactly the last word in music control apps. Anyway, fingers crossed. Many thanks

Tim Jury
Carshalton

Hi Tim. That is a fascinating tale. Use of a hash symbol in a password you'd think would be recognised as a necessity, but then I'm still using old Microsoft software that rejects backslash, hashtag and all that, so the world has yet to move on.

I have had plenty of instances of an app not working initially, only to suddenly work a little later – which always makes me wonder whether it is my fault. But this is now becoming so common I've grown less surprised and worried about my sanity! Two important actions are to shut down then re-start the phone, as apps can clash when trying to connect to services. The other is to delete and re-download the app. And ensure it's a right app, there being old/new versions (mconnect, devialet), control/play apps (Chord Electronics) and what have you. As you say, mconnect on an iPhone generally gets the job done, even if it is an unlovely experience!

The Matrix Element X uses an ESS ES9038 Pro DAC I see, just like Arcam's ST60 and they may

well share an underlying platform. Sound quality from this DAC chip is as good as it gets. **NK**

ARCAM ST60

Thanks for the excellent article on the Arcam ST 60. On the back of the article I took the plunge into the world of streaming. Whilst the basic set up of the machine on an iPhone 8S via Music life was very straightforward I fear I may have done more damage than good to my emotional health by plunging deeper into the world of bitrates, Audirvana, Tidal and MacBook Airs.

So as Confused of Kent can you help with some aspects of the set up as referenced by the review?

The reviewer states that Audirvana files were played on a MacBook Air to the ST60 so having downloaded Audirvana I can't get it to wirelessly stream to the Arcam. Does this mean I need to output the audio to the Arcam via a cabled connection and if so what is the right cable to use? The input rate from Tidal via my iPhone is showing as 48kHz when I believed MQA via Tidal was 96 kHz. Am I missing something in the setup? All my settings on Tidal are set to Master level.

Ian Smith
Confused of Kent

Hi Ian. I get the impression you are trying to connect a MacBook Air direct to the Arcam ST60 via wi-fi but this is not the way

the instructions in Arcam's User Manual.

The MacBook must be similarly connected to the router. Wired ethernet connection is always best, but for many people impractical. I suspect from what you say your MacBook sees the internet so is already on the 'home network' as it is called.

The ST60 and MacBook Air then intercommunicate through the home network. This also allows your iPhone 8S to control the Arcam via either their app, or Harman's MusicLife that you mention. It also gives the ST60 internet access of course, to get Tidal.

With all items connected, open the Audirvana software player, go to Preferences, then Audio System. Here you can select the Arcam ST60 and play music through it from your computer collection, including hi-res and DSD files.

You can also do this by going into the Mac's System Preferences Sound control panel and selecting Airplay there, but you only get CD quality with Airplay, so no reason to do this. Stay away!

I recommend you access your internet router's control panel to check on what is (or is not) connected, and by what method. You do this using a web browser, likely Safari in your case, and entering its access URL which will be something like 192.168.1.254.



"Having downloaded Audirvana I can't get it to wirelessly stream to the Arcam" says Ian Smith.

it is done. The Arcam ST60 must be connected to your local router, which in the UK is most commonly from BT. To do this via wi-fi you'll have to carefully follow

The password comes with the hub. If all items are seen here, then the system should work.

And finally, iPhones (which run iOS) support 48kHz maximum

sample rate. Your MacBook air will run MacOS that supports 96kHz – and well above. And the ST60 will work with Tidal files at this sample rate. I hope this helps. **NK**

STAX & WAD

Thirty years ago, in September 1991, I made my annual pilgrimage to the Heathrow Hi-Fi show. I joined a long queue snaking around the stands to await my 60 seconds with the new Sennheiser Orpheus headphones. I was speechless, dumfounded, blown-away – adjectives escaped me – by the sound. And I vowed, then and there, that one day... just maybe... I would get a pair of electrostatics.

At the time the Orpheus were £9,000 and given that I'd just sold my first house for £8,200 they really were the price of a house. The New Orpheus are £51,000 and so a "snip" relatively speaking.

Time passed and whilst not an Orpheus, 12 months ago I bought a pair of Stax SR-L700 Ear speakers with the SRM 006ts Kimic modded valve energiser. And they are... interesting.

About 20 years ago when World Audio Designs flew under Mr Keywood's banner I bought and built the WAD headphone amp. And I've used it continually ever since. Most recently with a pair of Focal Elear headphones. And so, using the pass-through RCA terminals of the SRM 006 I was able to directly compare the two headphone systems. The result was enlightening. The choice not obvious. Which one to use depends on what you want to do.

I often listen to jazz and classical. If I'm listening as a musician, possibly following a miniature orchestral score of a classical piece, or as a pianist following a jazz album, then the STAX system is unbeatable. Every note, finger slide, is spot on. Bass notes are sharp and stop and start with



Stax SR-L700 Ear 'speakers that Zap found interesting and often unbeatable.



"For this the Focal Elear is the choice every time" says Zap.

precision. The changes and choruses are absolutely clear.

But – and here's the twist – for all its precision I always feel that I'm standing outside the music, observing and listening. It's easy to concentrate on exactly what the musicians are playing. And when the music stops there is the sense of virtue that comes

of detail of the STAX but for pure enjoyment of the music, for me at least, it wins hands down.

Kind regards,

Zap

Hi Zap. Ah yes – the ethereal side, not the mechanical side. That sense of spacious ease, the sweet flow that's a lullaby – not an assault. Both Classical and Rock have this – music that is transcendently uplifting, and here a valve amplifier can lift you away. As you say, there are systems that come over as technically correct and others that come over emotionally moving. **NK**

A DIFFERENT TRACK

I found Noel's column in the September issue interesting, but personally, I believe there are some other hi-fi manufacturers who do not follow the tram tracks. Two companies, whose products I own, are Schiit Audio and ATC.

Schiit Audio. This US-based company makes some superb hi-fi gear and they also use proper aluminium cases. I own an Yggdrasil



World Audio Design valve headphone amplifier. "For pure enjoyment of the music, for me at least, with Elear it wins hands down" says Zap.

from hard work at a rewarding music lesson.

But sometimes, late at night when everyone else has gone to bed, I just want to listen to a favourite album, maybe Kind of Blue or In a Silent Way. I settle back in my Stressless Chair, in my music room. Put my feet up. Light a candle. Turn off the lights. And then just drift away completely lost in the music... what better way to end the day.

And for this the WAD headphone amp and Focal Elear is the choice every time. It may not have the precision, timing and forensic level

Multi Bit DAC, a Freya S balanced preamp and a Lokius balanced tone control. The company does not rely solely on off-the-shelf DAC chips, op amps or even USB receivers; they design their own. The DAC is the best I have ever heard and the preamp is an audiophile bargain. It is not currently in use, but will be once I install my brand new Technics SL 1200G turntable. I haven't used a turntable for over 20 years, so I'm looking forward to it. I have bought a Rega Fono MM Mk 3 and an Ortofon 2M Black MM cartridge. It will be interesting to compare it with



Schiit say "all Yggdrasil DACs use integrated multibit D/A converters – no delta sigma or discrete ladders here". Ian Walker says "the best I have ever heard".

CDs, streaming from hard drive and streaming from Qobuz.

The other notable company is ATC loudspeakers. I have a pair of SCM 100 ASL studio monitors. They are fantastic! Expensive but they are superbly engineered and also boast beautiful, veneered cabinets. I bought mine used about 12 years ago, and 5 years ago took them to the ATC factory for a complete refurb – new LF and HF drivers and new amp packs. They now measure, and sound, like new. The soft dome MF drivers were found to still perform as new, so weren't replaced.

I have found both Schiit and ATC an absolute pleasure to deal with.

Regards,

Ian Walker

AGEING EARS

It is an unfortunate fact of life that our high frequency hearing starts to decline as we get older. Too many loud music concerts probably do not help either. Audiophiles as traditionally understood as buyers of hi-fi separates and speakers are an ageing market. This may explain why so many modern speakers have a rising treble output and more explicit midrange.

As I bought my first real hi-fi amplifier in 1980 you may gather that this letter comes from personal experience, when suddenly that gentle triangle detail fades into background mush.

One thing I have noticed is that as my hearing fades I have become much less tolerant of treble edge, the grain that I once filtered out becomes more apparent and more annoying. This perception seems to be a common occurrence, as I have noticed it mirrored in writing by audio experts

from Russ Andrews to yourself Noel. What we want is not raised treble but purer treble. This rather confronts the strategy of many loudspeaker makers and perhaps explains why there is a sudden interest in warmer or more traditionally balanced audio gear. Or is that merely nostalgia for a lost youth?

What has brought this letter about is the acquisition of a pair of Beyerdynamic Amiron Home headphones driven by a Beyerdynamic A20 headphone amp (which has a reputation for being a little stark with the wrong phones and sources)



Quadral fit a three-way toggle switch to change treble level. Centre position gives flat-response.

moderated by a rather strange, very short, interconnect cable I acquired many years ago, from my amp to the headphone amp. In the right context this moderates treble grain whilst revealing treble purity, creating an almost palpable reality to the sound. The combination has restored much treble detail whilst giving me edge

free listening, attributable I think to a synergistic combination of components (which is rarely heard but instantly recognisable when it occurs).

The fact that the interconnect which is of unusual construction, 30cm with a neoprene rubber sheath over continuously cast high purity copper, cost less than £10 from a down market accessory maker, which was cheap even 30 years ago, is another story. In most contexts it just sounds dull but for the second time in its life it perfectly fits the bill and becomes again a permanent fixture rather than one of the spare cables.

Listening to even older CDs is markedly less troubled by edge and grain. The combination sounds even better using high res downloads from a USB stick to my Yamaha streamer and from vinyl. Grain and edge free listening is possible as we get older and maybe younger audiophiles can show us a thing or two with high res streaming, downloads and headphones. But purity of signal and clarity is all.

Dr John Hurley

Hi John. Your cable experience reminds me of a time when I consistently preferred and used carbon sheathed cables from Van den Hul that others found dull. To me they were clear and tizzy free. Others it seems prefer a brighter, sharper, more incisive sound.

A problem arises when the "need for speed" and "insight" are taken too far, for the sake of audio drama. This is easily done with loudspeakers by raising tweeter level. Then the music not only becomes sharp, but coarse too because distortion harmonics are emphasised.

Music of a "dull" balance may in fact just be accurate. Loudspeakers that measure flat don't jump out at you – and that's the point. The loudspeaker is meant to be a neutral transducer, not an additive one. Whilst BBC loudspeakers long ago were noted for this approach and their particular sound, it all seems to have slipped out of fashion.

Quadral adopt a sensible approach to this problem by adding a treble lift switch that raises output from their ribbon tweeter by +2dB – in for example the Quadral Rodan 9 reviewed in our April 18 issue. KEF Reference loudspeakers also run flat right across the audio band.

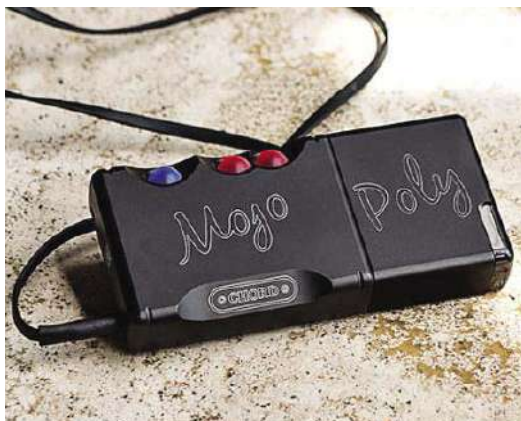
Ageing ears? Whilst I cannot hear a steady high frequency tone at 16kHz I can detect the tone bursts of our Clio loudspeaker measurement system when measuring loudspeakers. Likely I am hearing spectrum spread at tone start and stop (look up FFT and windowing) – the envelope rather than the discrete tone. The ear detects variance and this is probably why steady state models relate poorly to experience. **NK**

KEF Q150 PRIZE

I would just like to thank you so much for the KEF Q150 speakers that have finally come into my possession for my Letter of the Month in the June edition.

They are superb and a most welcome edition. They have raised the bar, it just feels like I am listening to new albums, the detail, clarity and control they provide are fabulous to my ears and my little Nytech is very capable of driving them. I concur with everything Dr. Russel Sceats said of them in your May edition.

I had already invested in some decent cables at long last, prior to receiving the speakers. I was tempted



"I think my next upgrade will be a CD player" says Kevin Youde. Add a Chord Electronics Poly to your Mojo and you have a very nice one.

previously. I am amazed by the sound from such a change. How can this be?

I have also finally got to sort out my Chord Mojo issues as somehow I had managed to kill the battery. I got Chord to sort out that and also my USB connections too so I don't have to use my Heath Robinson approach to use it. They did it in a very timely manner (I wish I had done this sooner) and for a very favourable price, so I would just like to thank the customer service I received with them, they were brilliant.

I think my next upgrade will be a CD player – but not sure what to plump for, ideally one that could play all formats like an Oppo BDP-105D. Kind regards

Kevin Youde

Hi Kevin. Glad you liked the Q150s – they really are a fine little loudspeaker. Interesting that you are surprised at the difference good 'speaker cables can make but that's a common reaction.

Whilst a multi-format silver disc player like those from Oppo were, in their time, necessary and valuable, the silver disc player is now looking a bit dated as an idea. Your Mojo will give fine sound from CD if you hook it up digitally to a player or transport, or there's Poly that acts as a hi-res player from microSD card, as well acting as an internet streamer. **NK**

BEFUDDLED

I have recently found myself in a befuddled state in my hi-fi journey and feel I need some help. I have a collection of equipment that just doesn't feel right and I need advice.

System consists of a Cayin CS-55a valve integrated amplifier

KT88 (22W Triode/40w Ultralinear) and I'm feeding an Aurender NI100SC music player/streamer straight into the amp's USB DAC. Loudspeaker wise I'm using my old but faithful Sonus Faber Cremona Auditor stand mounted speakers.

Cable wise, I use Russ Andrews Powerkord 500s throughout into a Puritan PSM 156. Kimber Select USB-CU and Yter speaker cable. All equipment sits on various Iso acoustic isolation feet and platforms etc.

I find the sound lacks fine detail and information seems distant at times with all types of music. Listen mainly through Qobuz Studio, Rock, R&B, some jazz and classical.

I'm assuming using an off-board DAC is first option to get things moving in the right direction. I also wonder whether the speakers are old hat now. Do I need higher efficiency speakers? I don't play music particularly loudly and I'm not needing to crank the volume up too far around the dial. I am listening quite near-field at the present time. System is firing wide ways rather than down the room (18 x 12ft).

Any recommendations? My preference is for a warmer sound than analytical. Fun rather than



KEF Q150 Prize: "the detail, clarity and control they provide are fabulous to my ears" says Kevin Youde.

with the Chord Company C Screen X after your review but as my budget was around the £165 mark, I needed 5 metre pair due to my awkward set up so after consulting my hi-fi friend who is using QED Supremus cables, I plumped for QED XT40i Air Loc terminated cables from Richer Sounds.

Boy was this a good investment; I was astonished by the difference a cable could make straight away even with the JVC speakers. I was using some Gear IT cable from Amazon



KEF R5 loudspeakers. Full of the "fine detail and information that seems distant" in Martin Bond's system.

forensic! £4,000 is the budget.
Many thanks and best wishes,
Martin Bond

Hi Martin. If the "sound lacks fine detail and information seems distant" I suspect the Sonus Faber Cremona Auditor loudspeakers might be the cause. You may well consider auditioning more detailed loudspeakers, such as those from KEF with their aluminium cones and smooth audio response. The R5 floorstanders with 87dB sensitivity would suit, price around £2000. It's unlikely efficiency is the issue, as you suggest, and the KEFs more than suit here.

For a DAC with detail and upfront sound a Quteq from Chord Electronics perhaps? At £1250 it would slot in well I feel.
NK

ARM STANDARDS

There are two aspects of tonearm design, which over the years, I wished were industry standards.

The first one is an SME type sliding arm base, which makes cartridge alignment easy, relative to the pushing/pulling/twisting with the majority of arms today. I think Audio Technica used this design some years ago.

The other one is the finger lift. In my opinion, it should never be part of the arm's casting: it should be supplied with the arm as an accessory, leaving the user to decide whether to use it; it should be curved as well.

I find a built-in lift impedes adjustment of the cartridges's alignment. For some time, I used Alphason arms. The Delta had a straight finger lift, the HR 100 MCS didn't. However, I was glad to return to SME arms, because of the sliding base and a curved finger lift supplied as an accessory.

The SME arms, I think, have never had a fixed finger lift. I have cued by hand, preferring to position the arm over the desired track, then lowering the arm using the arm's cuing lever. With SME arms, no matter how fast you lower the lever the arm will drop at a fixed rate. Great!
Mike Bickley.

Hi Mike. The sliding base is expensive as well as bulky. They are very nice, keeping effective length fixed (for what it's worth) but by raising the cost of the arm I cannot help wonder whether we have lost SME arms as a result. The loss of an



"An SME type sliding arm base makes cartridge alignment easy" says Mike Bickley. Better than the "pushing/pulling/twisting with the majority of arms today".

engineering masterpiece.

The reason to lower needle into groove by hand and not platform it is to be absolutely certain that the brain is functioning perfectly for hi-fi purposes. This is a little test I carry out on myself. When the fingers start shaking I know it's all over! **NK**

RECORDING VINYL

Having read Donald Hawkins' letter on recording analogue in the latest edition of HFW, I thought you may like to know my slant on this.

I use a Xitel Inport, now discontinued, reviewed in these very pages some time ago I think. This gets its signal from the Tape Out on the amplifier, of course I can connect the phono stage direct to the Inport if I need to.



Shure's clever stylus guard that protected, destaticised and damped.

The advantage of using Tape Out is that I can record any analogue source connected to the amp: I just have to press the record button on the amp, this sends the signal to the Inport. The Inport is then connected to the PC via a USB cable and is set up in the usual way in the 'Sound' tab on the Control Panel in Windows.

The software I use is LP Recorder and LP Ripper supplied by CFB Software (<http://www.cfbsoftware.com/default.aspx>). There is also a 'de-clicker' programme available as well. This was originally bundled with Inport.

Unlike Audacity it is not freeware, total cost is around £58 for the two programmes. They are available as trial versions too. The LP Recorder is delightfully simple to use: name the directory, name the file, set the levels and record. It records in WAV.

I have run the LP against a digital version and it's very hard to tell which is which. If (of course) the de-clicker is used then it's easy to tell the digital version. With any recording system you cannot improve on the original, you may be able to adjust the recording tonally with Audacity to suit your tastes, but this is departing from the original recording.

The software I use may not have the sophistication of Audacity, but the ease of use has a lot going for it; CFB Software's support is very good too.

I use the above Xitel Inport system to make superb recordings of FM broadcasts online or any stream on the PC, using the Xitel Inport bypasses the PC's sound card.

Regards
Mike Bickley

Hi Mike. I see the Xitel Inport gives CD quality (16bit) from a small, inexpensive box, allied to good software that's far more user friendly than Audacity.

But CD quality converters can be detected, producing a slightly grainy sound that comes across as a tad mechanical and lifeless. A good simulacrum, that's for sure but best to go for 24bit conversion with LP. Many computer sound cards offer this, or if you worry about computer noise, a high quality external 24bit ADC such as ADL's GT40 phono stage is ideal.

The software only affects user convenience, not sound quality. All ADCs spit out WAV; if you want to compress to FLAC (or whatever) then there are numerous ways to do this, with free software such as XLD for example. I'd suggest better convertor with same software. **NK**

A LITTLE AUTUMN CHEER

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Up To Yu

Chord Electronics 2yu bridge for their 2go streamer, reviewed by Noel Keywood.

Continuing Chord Electronic's use of short, self-explanatory names to suggest a product's function, they recently launched 2yu – a bridge unit (£449) between the 2go streamer (£995) and outside world. In original form 2go was purposed to plug into their Hugo DAC, as we explained in our 2go review (Aug20 issue). But what if you want to plug into someone else's DAC or a digital amplifier perhaps? Then you need 2yu – it's as simple as that. It's an interface that allows the 2go streamer to speak by digital to other products, not just Hugo.

For this review of 2yu with

2go we also received a Qutest DAC (£1250), reviewed in the Nov18 issue, so here's a look at all three, but to pick out the practical nature of 2go+2yu I plugged the combo into our Creek Voyage i20 amplifier, since this is how it may be used in practice.

2yu is a small package measuring 100mm long, 50mm wide and 22mm high. It comes in a strong but well finished machined alloy case with BNC, RCA phono socket and TOSLINK optical outputs, all handling S/PDIF. There's also a USB A output. Cables are supplied for each output: BNC-BNC, optical TOSLINK-TOSLINK, USB A to USB B.

Also supplied is a plastic bag

with small bits: two locating pins, two tiny grub screws and a hex key to tighten them. The pins must be screwed into 2yu to strengthen its mechanical connection with 2go, that otherwise relies on two small microUSB electrical sockets. It's a fiddle: one pillar needed persuasion with pliers to run up its thread and the grub screws are so small they must not be allowed to reach the floor or will disappear down a gap between the boards. Technique here – as with pickup cartridge fixing – is to carry out process on a soft, lightly crumpled cloth to catch and retain s screw trying to make an escape. But there was more fun to be had...



2yu has no app or power supply, It is powered from 2go. Once bolted on it offers four illuminated button options. These are power on/off, a button-light dimmer, output select (USB/S-PDIF) and Mute. There is no remote control of these functions, but mute happens when pausing or stopping Play in the app of course. 2yu only remains powered and working whilst 2go is mains powered, falling silent when it is removed even though 2go has internal batteries.

Setting up 2go was as peculiar and awkward as I found in my original review, but with the benefit of experience easier and quicker to negotiate this time around. To set up, Chord Electronic's GoFigure app must be downloaded. Afterward, any player app can be used, mconnect being recommended and the one I used.

First hang-up: my old GoFigure app did not work but a new download did (it has been updated). Then I was told the ethernet connection I'd established for measurement purposes did not need GoFigure. Also – and unusually – ethernet does not take precedence and auto-connect as it does in most products. Instead, a small Config button must be pressed to initiate ethernet recognition, whereupon my BT SmartHub 2 router positively identified it as Chord 2go – a good start. Many products still come up as 'unknown'. And, as a postscript, having been through this process ethernet was then seen by GoFigure and did take

a declared 192kHz sample rate PCM and even DSD64 up to 512, but the 2yu User Manual states PCM at 384kHz sample rate and DSD64 data rate as upper limits. DSD64 played successfully but the USB A output and lead must be

made Airplay available also, but this is CD quality only. Similarly the iPhone offered Airplay as an option, but I defaulted to mconnect sending phone files to 2go as a UPnP player. This gave a full 124dB Dynamic Range measurement showed, as did play from microSD card, MacMini and the PC. It all worked fine with ethernet but some stuttering occurred with wi-fi which was a range issue. I suspect optional aerials would help.

2go's wi-fi connection is 2.4GHz only, so GoFigure would not see my wi-fi (5GHz) until I switched 2.4GHz on. Then it needed password entry rather than creating a local set-up channel that avoids this. In London I have been forced to use a very long password and 5GHz to stop my wi-fi being used for dubious purposes, making 2go awkward to set up on wi-fi, but it worked OK – sort of. Mconnect initially would not then see 2go as a UPnP device, playing via Airplay which

"2go+2yu played it differently: there was the snappy sense of insight and definition Chord Electronics major on"

precedence!

This done, mconnect and 8player Pro saw it, from where I could select online sources like Tidal or Qobuz, play music files on the iPhone or on a microSD card in 2go, since it has two 2TB card slots – massive capacity. Audirvana+ software player on a network-connected MacMini saw '2Go' as a UPnP 'active audio device' able to play up to

used here, since DoP is being sent to the DAC (and the DAC must accept DoP); there's silence from the S/PDIF outputs.

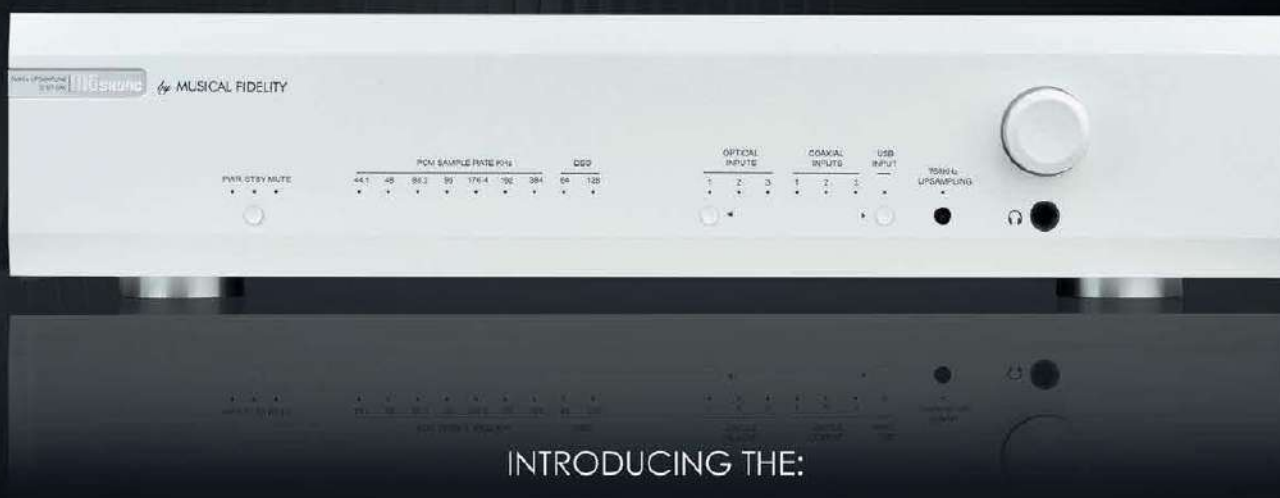
This is a push-play system from Mac, where music is played out of the computer. With the PC switched on I could also pull-play from its music files using mconnect, both computers acting as hi-res UPnP servers.

The Mac's Sound control panel



2yu (at right) plugs into 2go electrically through microUSB plugs and mechanically through spigots, locked into place by tiny grub screws.

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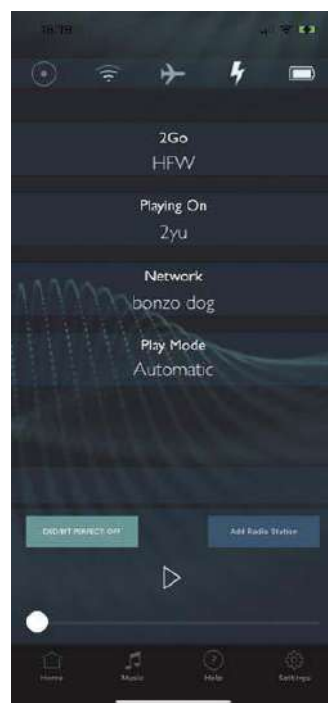
2yu has four digital outputs, to feed an external DAC or digital amplifier. At left USB, then S/PDIF through optical TOSLINK, RCA phono socket or BNC socket. We used it with Chord Electronics' Qutest DAC, seen behind.

gave just 100dB Dynamic Range, but after a shut down and re-set it did. Oh what fun!

Bluetooth can be used as a control channel to 2go it seems, the GoFigure player being able to play from microSD card for example (after building a database). But I was unable to send music files to 2go from my iPhone with or without the dedicated Airplane/Bluetooth mode. There may be a way of doing this but I could not find it. The GoFigure app saw 2yu connected to 2go so all was well here.

So 2yu does deliver super high resolution music from 2go including DSD (as DoP), providing 2go is set appropriately. At worst Airplay steps in to deliver CD quality. The need for two apps and the confusions that arise from arrays of menus, options and transmission methods are challenging, but this relates to 2go rather than 2yu. Once up and running mconnect worked well.

Within a system, rather than on the test bench, 2yu's purpose became clearer. I used the supplied optical cable to connect into our Creek Voyage



The basic status screen of the GoFigure app, showing Airplane/Bluetooth mode at top, Radio stations and a player at bottom, with transport control and Music file selection. This overlaps with mconnect app in function.

i20 amplifier, turning this linked pair into a small, high resolution player able to play from a music library stored on two microSD cards or from a computer – Mac or PC. As well as from commercial streaming services too: Apple, Amazon et al.

2yu turns 2go into a stand-alone streamer and player in effect and it all worked well. Because there is no on-board screen or power supply 2go and 2yu together become a tiny, lightweight but solidly built digital source that, on our rack, sat beside the Creek on the same shelf. Small size and robust build are key strengths here. There is, however, a small 5V switch-mode power supply to feed them.

SOUND QUALITY

Since this is a review of 2yu there's not so much to say about sound because it is just a bridge, having no direct influence on sound quality – in simple outline at least. But I still found 2go+2yu delivered a crisp, fast sound from microSD card through the Creek's internal AKM DAC that curiously was more Chord Electronics sound than that I



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The GoFigure app's Settings menu, with Airplane and wi-fi Hot Spot mode, SD card recognition and DSD/bit perfect option too.

know from AKM or Creek.

AKM DACs are even fuller and warmer sounding than those from ESS, very much in keeping with their "Velvet Sound" moniker. Creek amplifiers too are far from the bright side, having a lovely analogue ease and depth to them. Yet in this environment 2go+2yu played it differently: there was the snappy sense of insight and definition Chord Electronics major on, rather than warmth. Benjamin Grosvenor's fingers hit the piano keys with a sense of precision, playing Chopin's Nocturne No 5, Opus 15 No2 (24/96). The delicacy of his touch was made clear as well as his fluid timing – it was more an insightful than full bodied sound.

Much the same with Rock where, for example, I got to hear right into the fine inflections of Marta Gomez singing Lucia (24/96) from an image hard chiselled rather than soft edged. Deeply insightful, not fluffy or warm. Chord Electronics products see further in than most but they don't romanticise.

I ran the Qutest DAC separately, plugging in our Oppo BDP-205D as a CD transport, connected digitally via the optical cable supplied. Qutest then fed

"hard chiselled rather than soft edged. Deeply insightful, not fluffy or warm"

the Creek i20's analogue inputs that drove in turn our Martin Logan ESL-X hybrid electrostatic loudspeakers. With its unique DAC and massive dynamic range Qutest delivers the Chord Electronics sound in spades, with crisp, chiselled images placed on a big, quiet sound stage. It shouts "I'm good", being more upfront than ESS and AKM DACs, making it seem vivid and deeply insightful in comparison. It's a 'stand up and take no prisoners' delivery that demands good source material and – dare I say it – DSD worked better than PCM. In fact I got quite hooked on listening to DSD through the Qutest: the two seem well matched. Such musings apart though, Qutest remains a startling DAC of vast ability my re-encounter with it reminded me.

CONCLUSION

The small 2yu bridge is a neat little addition to Chord Electronic's 2go, the two forming a small streamer of very wide ability, able to read music from commercial music servers, internal microSD cards, mobile 'phone, Mac and PC – including DSD64 files. 2go's need for two apps that share music finding and playing responsibility remains a difficulty that needs solving for ease of use. And whilst all was well with ethernet connection, wi-fi was temperamental compared to that of other streamers, likely due to lack of dedicated aerials, so best used with ethernet.

Great technical ability and sound quality though, as always with products from Chord Electronics, so definitely worth hearing. I very much enjoyed it.

MEASURED PERFORMANCE

Frequency response of the Qutest reached 46kHz (-1dB) before rolling off to the upper theoretical limit of 96kHz, our analysis shows, with 24/192 PCM data and the 'Incisive Neutral' (white) filter. The 'Warm' (orange) filter was similar. The 'Incisive Neutral HF roll-off' (green) and 'Warm HF roll-off' (red) both rolled

off treble to -1dB at 20kHz so will sound warm – with both hi-res and CD.

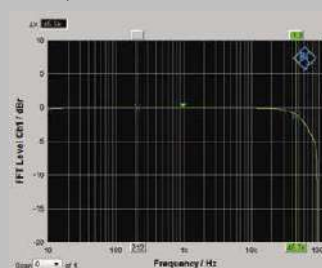
The BNC electrical inputs worked at 192kHz sample rate, the optical had a 176.4kHz upper limit with the cable supplied, becoming intermittent at 192kHz where nowadays most products are not.

Distortion was extremely low, measuring just 0.013% (-60dB, 24bit), our analysis showing just noise. This resulted in a class leading EIAJ dynamic range value of 124dB. Qutest maintains a massive Dynamic Range advantage over most else.

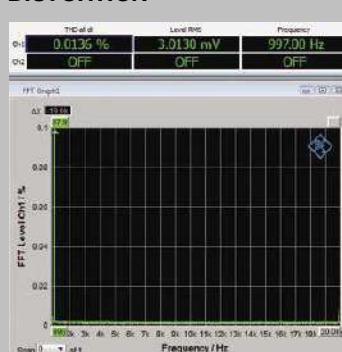
Output measured 3V maximum (there are 1V and 2V options). Results are best at 3V since this raises signal above output amplifier noise; as before Qutest was measured at this setting.

The Qutest sets measurement standards. The only problem is an optical input with a 176.4kHz sample rate limit; this may be a TOSLINK plug fitting issue. Chord Electronics say it does work at 192kHz. **NK**

FREQUENCY RESPONSE



DISTORTION



Frequency response	4Hz- 46kHz
Distortion (24bit, -60dB)	0.014%
Separation	101dB
Dynamic range	124dB
Noise	-122dB
Output	1V / 2V / 3V

CHORD ELECTRONICS 2YU £499



OUTSTANDING - amongst the best.

VERDICT

2yu is a neat little bridge that usefully supplements 2go as a streamer.

FOR

- USB and S/PDIF outputs
- small
- suits M-Scaler

AGAINST

- mains power only
- 2go awkward to use
- 2go wi-fi range

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Tyre Kicking

Are you a tyre kicker? Nah! Keep quiet about it then – here are some top tyre kicking tips. For the showroom or at home.

A PRO TYRE KICKER'S KIT

- | | |
|---|---|
| 1) RCA shorting plugs | (Amazon £3) |
| 2) Jeweller's screwdriver or teaspoon | (£10?) |
| 3) RPM iOS app | (free / upgrade \$15) |
| 4) Onyx 'Octave RTA' spectrum analyser iOS app | (£4.99) |
| 5) Digiflex multimeter | (Amazon £6.99) |
| 6) Clearaudio Tracking test disc LPT83063, also with 3150Hz W&F test tone Or Ortofon test disc. | (Clearaudio on-line €59). (Henley Audio £40.00) |
| 7) Stylus force (VTF) gauge | (Amazon £10.99) |
| 8) Ortofon cartridge alignment protractor | (Amazon £7.99) |
| 9) White & Pink noise – CD test discs | (various) |

LOUDSPEAKERS

1) Listen on-axis between bass/mid (or mid) and treble – optimum. Then move up and down whilst fairly close (<2m). Do they change their sound? The answer is “yes” because most do. The drivers are going in and out of phase. Why? Because at the common crossover frequency of 3kHz the tweeter should be less than 114mm from the woofer's centre cap – near impossible except with a co-axial drive unit (KEF). If a tweeter lies away from the bass/mid then phase changes are guaranteed – some designers don't care. Take a view on whether you do.

2) Rap the cabinet, including the rear panel. If it has a woody thrum then expect colouration of the sound. Check with deep male speech/vocals when listening. Don't check with wood bodied instruments like pianos or cellos as they'll sound better!

3) With front ports especially, turn volume down and put your ear to the port. What you hear constitutes colouration in the sound. If you can hear vocals and instruments being fired from a front port it's not good. Take a view.

4) Don't like the bass? Stick a sock in the port and see what you think. This will increase acoustic damping and lower bass level. Experiment.

The idea is to increase acoustic resistance, not block the port totally – and that's why a big, hairy sock is better than closed-cell foam. Turn volume low and use Onyx 'Octave RTA' spectrum analyser (see 4 above) to measure.

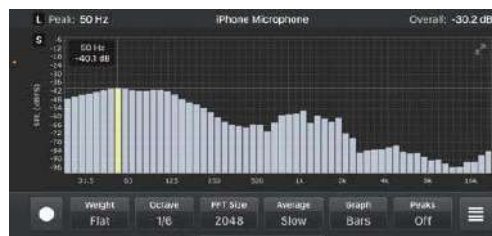
5) Too bright? Put grille on and additionally hang a thin curtain of material or Kleenex tissue over the tweeter. This will reduce highs by a few dB, just enough to tame a bright sounding loudspeaker. Use white noise from a test CD for easy assessment (or generate it in free Audacity music editor).

6) Too bright No2. Remove one bi-wiring link and connect a 1 Ohm, 1W carbon film resistor in its place. It will reduce treble by around 1dB. Use larger/smaller values to fine tune. A less visible and more professional solution than 5) above.

7) Subsonics? Use 'Octave RTA' spectrum analyser app from Onyx (£4.99) to measure bass levels. If you play a bass test track first through a demo speaker and then at home, you can see whether you'll get more. Measure 1m or less from speaker, or at listening position for room influence. Using pink noise rather than music helps.



World Audio Design KLS6. The gold dome tweeter face plate kept it away from the midrange unit – not ideal. Move up and down when listening to assess impact.

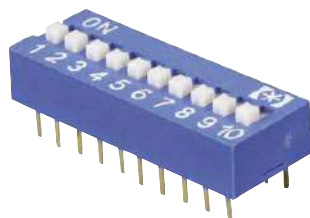


Output from a typical port, peaking around 50Hz, measured with Onyx 'Octave RTA' spectrum analyser. To do this, turn volume very low to avoid overload and position phone mic at port exit. The peak around 1kHz is unwanted box coloration – the reason why ports face backwards. Listen to port when playing music to hear more.

AMPLIFIER

1) Turn volume up. Is there hum or hiss? Modern products are hum and hiss free nowadays (turntables excepted) so there should be silence. If hum then something is wrong. Use RCA shorting plugs (Amazon, a few £s) in Line inputs for this test, then plug in source and see what happens.

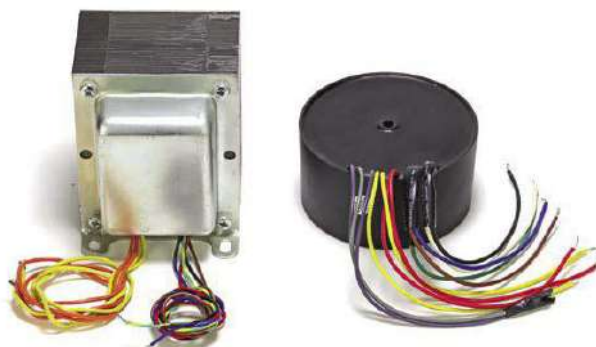
2) If Bluetooth or wi-fi cohabit with a phono stage, especially in a small cabinet, all sorts of funny noises can suddenly appear when phono is selected and volume turned up. If so internal screening and/or earthing are inadequate. Walk away.



A circuit board mounted DIP switch. Awkward to use and of limited life.

3) Are there mini-slider (DIP) switches underneath? These things are cheap and have a short life. They also make for difficult selection. Beware.

4) Can you hear mechanical hum from the transformer? It shouldn't be there. May be audible during late night listening. Up to you.



Transformers can, if imperfectly treated, hum or buzz. Note the black toroidal is potted to avoid this.

5) Are there rubber feet that have been stuck on? if so, expect to lose them after a year or so as the adhesive dries out. Cost cutting stupidity.

6) Is switch-on silent? Expect a pause and protection relays to click in, but the bass cones should not move and no click heard in speakers. Start up delays of more than 20 secs are unnecessary even with valves. If you can wait, fine. Otherwise walk.

TURNTABLE / ARM / CARTRIDGE

1) Hold the tone arm's finger lift and tap the tube lightly with a small jeweller's screwdriver or teaspoon (volume at zero). If it rings with a bright 'tink' then it is resonating like a tuning fork. Ideally, it should give a dead 'clunk' (like a Rega as shown here). Next, an alternative method.



Tap arm with jeweller's screwdriver or teaspoon to see if it rings. Support lightly in finger.

2) Turn volume right up and move the tonearm in its rest or tap it. Does it produce ringing noises in the speakers? If so, the structure is resonant and microphonic – not good. This degrades stereo definition and stage width with hand drums in particular; make sure to listen to suitable music as a test.

3) Put arm in rest, turn volume up and tap headshell lightly with screwdriver. If it rings, not good. Try a cast aluminium headshell with stiffening side ribs (Audio Technica). They usually sound dead. Good.

4) Is there hum and/or hiss at high volume? With MM expect hiss from the coils, but there should be no hum. With RCA shorting plugs hiss will disappear. Check this happens.

With MC there is no hiss from the coils so if you hear it, it's coming from the preamp. With RCA shorting plugs hiss will remain. Is it tolerable at ordinary listening level?

5) Does a turntable have a wall-wart power supply with a plastic earth pin? If so it is not mains earthed and cannot, in itself, produce hum. If there's hum, earth connection to amp is missing and needs fixing.



Wall-wart with plastic earth pin, so no earth.

6) Take in a continuity tester with a buzzer. Check for continuity between turntable mains plug earth pin and the RCA phono output socket earths. If the buzzer buzzes then hum is all but guaranteed.



Digiflex multimeter with continuity tester.

7) Do a nasty. Take in a test LP with a Wow&Flutter test tone (3150Hz). Clearaudio make one (see 6). Play it. Does the high frequency tone sound stable? Sit still or your ears will be confused by phase changes from the loudspeaker. If you hear wavering, pitch wander or watery pitch then speed stability is an issue. A reference Direct Drive helps. Synth based music holds pitch so use it too.

8) Put arm on stationary LP, turn volume up and tap plinth lightly. You should hear nothing in the speakers. If the plinth makes a sound then it is microphonic. Not good.



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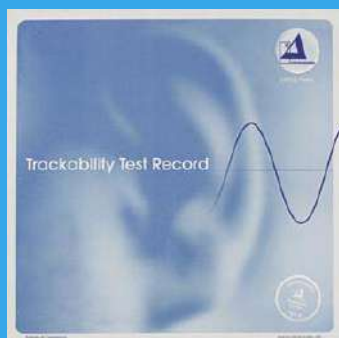
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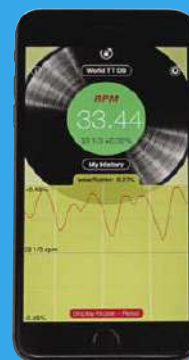
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9) Check cartridge tracking ability with Clearaudio (or Ortofon) test discs. Expect secure tracking up to 70µm peak. LPs are not cut to levels higher than 60µm to avoid them being unplayable – higher test levels are academic.



Clearaudio test LP

10) Download the RPM app to check speed stability. Place 'phone on platter and give it a spin.



Measure turntable speed and speed variation (wow & flutter) with the RPM app. It is more accurate than most test LPs.

NOTES

No 3 in Tyre Kickers Kit) RPM iOS app. This is extremely accurate – preferred to 3150Hz Wow&Flutter test tone on LP due to lack of cutting lathe speed variation error.

4) Onyx 'Octave RTA' spectrum analyser app. Use 1/6th Octave and 2048 FFT size, plus cursor to show frequency. Point the 'phones mic (at bottom of phone) directly at source, 1m distant. For port analysis, go right up against, at very low volume to avoid mic overload.

5) Digiflex multimeter. Any multimeter with Ohms or Continuity function will do. We chose the cheapest.

6) Clearaudio Tracking test disc LPT83063. At time of writing this had become unavailable. Ortofon's test disc also has a tracking test but no 3150Hz W&F tone.

9) White noise – CD test discs (various). White noise was common on CD test discs, but they are now rare. Any steady noise will do. Audacity (free recording software) has white noise that can be recorded to a Flash Drive and used in a demo session. It also has pink noise that gives flat response with the RTA 1/3 / 1/6th octave analyser.



The free Audacity music editor has both white and pink noise within its Generate / Noise menu. Record a few minutes (CD quality) to a .wav file, save to a portable Flash Drive (memory stick) and use as a test signal in conjunction with Onyx 'Octave RTA' spectrum analyser.



Ortofon test LP. Good for tracking tests but no W&F tone at 3150Hz to check speed stability.

Ortofon test tracks

9. Tracking ability, lateral 50 µm peak
10. Tracking ability, lateral 60 µm peak
11. Tracking ability, lateral 70 µm peak
12. Tracking ability, lateral 80 µm peak
13. Tracking ability, lateral 90 µm peak
14. Tracking ability, lateral 100 µm peak



Stainless steel weighing area without magnet, no need to worry about damages to your device.

Every tyre kicker should have a digital stylus gauge with calibration weight, to ensure stylus downforce is correct.

These tyre kicking tricks arise from our own measurements using a wide variety of test equipment, including a Bruel&Kjaer accelerometer (at right) linked to a Hewlett Packard HP3561A spectrum analyser for turntable and arm tests, Kenwood W&F meter also linked to HP3561A and Clio analysis software for loudspeakers. All else measured by Rohde&Schwarz UPV spectrum analyser.



Net gain

It may cost more than a decent streamer, but Martin Pipe discovers there is definite merit in the latest version of Coherent's 6D digital interconnect.



Cynics may 'pooh-pooh' esoteric digital interconnects, on account of the fact they're carrying your music as resilient streams of digits instead of vulnerable analogue signals. Yet for all this, competent cable designs can be heard to make subtle improvements in the link between, for example, source and DAC. Even a budget cable, from an established manufacturer like Chord or QED, will usually have a positive effect, relative to a cheap bundled lead with moulded plugs at either end. They are, for example, optimised for use as 75 Ohm transmission lines (although consumer-type phono connectors, unlike the BNC plugs used professionally, are far from ideal for this sort of work).

With a price tag of £1695 for a 1m phono-to-phono - there's also a £1995 110 Ohm balanced AES/EBU version with XLR connectors - the Coherent 6D 'Generation 2' is evidently pitched at the opposite end of the scale. As with the other 6D Gen 2 cables we've examined, a lot of work goes into its construction - hence the expense. Coherent itself draws the wire used as conductors, which are gold-plated to 6 microns, cryogenically-treated and then enclosed within three custom-made fluoropolymer dielectric layers. In the phono version, two of these insulated conductors - which are individually-screened - link the barrels and central pins of the phono plugs at either end.

The balanced version is more expensive because there are three such conductors, each of which are also individually-screened.

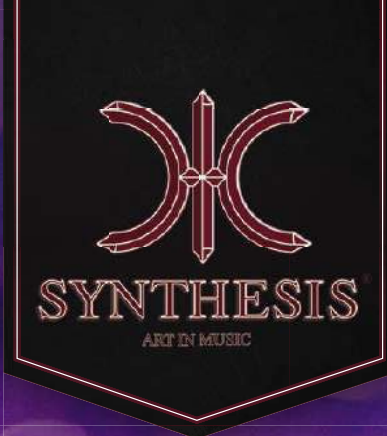
Overall shielding, in the form of a wire braid, is then applied; finishing off the cable is a tough outer jacket and final cryogenic treatment. The overall braid is 'floating', being connected to the independent outer shields of the Coherent-rebuilt Furutech phono plugs specified for this

Used with a range of equipment - including Cambridge streamers and amplification, Chord/Prism DACs, Focal headphones and Quadral speakers - there was audible evidence Coherent's approach has paid off. This is modestly-priced gear by up-

Switching to a DG recording of

The audible improvement offered by Coherent's 6D Gen 2 digital interconnect should be obvious to even the most vocal of cable critics I feel. It's just a shame it's so expensive, but much of that is down to cost-no-object manufacturing techniques - special materials, manual processes, stringent testing and much else besides. A top cable, no doubt.

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June 2021

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"The Yorkminster's 12in bass unit hardly moved even when threatening to blow the walls down"



Noel Keyword

Of the Cambridge R50 loudspeaker and other big transmission lines from long ago an owner of many on a forum said "big loudspeakers went from square to rectangular" as a matter of fashion in this period (the early 1970s).

Er, no – it wasn't fashion. There was good reason. As there is good reason for many features of loudspeakers that are worth covering here, just so you know how to reach a quick understanding on what you see. Forget the ball cocks (an old plumbers' term!) and look at the cabinet.

Why did loudspeakers move from square broom cupboards to a narrow yet deep profile like that of the R50? Well, the rear cabinet wall needs to be as far away from the bass/mid driver as possible to minimise reflections back out through the cone, producing a nasty box echo colouration. Explaining the need for depth. Rear absorption/diffusion is important of course, but I'm talking fundamentals here.

Additionally, stereo imaging is best with asymmetric placement of drive units on a narrow baffle – wide baffles give vague imaging.

For low bass big cabinet volume is needed.

Put all these factors together and you come up with a tall, narrow but deep shape. Add in less visual intrusion in the home and it's a no-brainer. That's why speakers changed shape in the 1970s and that's why they remain tall and slim today.

But what about those good old designs? The giant Tannoys and Leaks? Those huge old cabinets developed thunderous lows from little power – giving a room moving experience like no other. Forget bass quality and all that, they had bass power, enough to re-arrange the

settees for free when driven from a 20 Watt valve amplifier. That's why today, when people hear them, they are astonished.

Not all good though. Design methods were ad-hoc by today's standards so whilst there was power, there wasn't necessarily control. Perhaps it didn't matter when LPs and the recordings on them weren't so good. This was in a time when open-reel studio tape recorders suffered heavy bass distortion caused by magnetic saturation in the record-head/tapes. More approximate times, but as we all know, lovely analogue recordings emerged from those times.

Tuning a cabinet was, in the past, an art rather than a science – and it was easier to extract high sensitivity and deep bass from a big cabinet. What changed everything was the emergence of affordable computing in the 1970s and KEF's development of a computer based loudspeaker analysis programme. Suddenly, the art became a science and broom cupboards were found to be unnecessary. By matching drive unit to enclosure, deep bass was attainable from a smaller cabinet.

It was at this time, I sheepishly admit, that both Leak 2075s and then Leak 3090s left my ownership after years of musical joy because 'better' had arrived. As loudspeakers shrunk and bass units improved these giants started to sound a bit loose lower down, although in retrospect it may have been that my rooms were also too small for them.

All the same, I got much enjoyment from these big, powerful and characterful loudspeakers. It's churlish to say anything is "better". Like insulting and then removing an old dear friend that never did any wrong. I'll always regret losing the Leaks. If this is why people hold on to such loudspeakers, or dream of

owning them – then I understand.

It wasn't just those Leaks that were "big square boxes". Of all such loudspeakers big Tannoys came top. The Yorkminster was first to blow me away (April 06 issue), then – having seen the light! – GRF 90 in our Feb 17 issue and many others including the Westminster of course. Reviewing them took not only special handling equipment because of size and weight but also a goods lift to a very large listening room.

And therein lay the drawback: you needed a big home (plus a big wallet). I tried the Yorkminsters in my 17ft lounge and should not have wasted all the time and effort of getting them there. In our large concrete walled office they thundered; in my lounge there was little hint of such power. This is another reason why big loudspeakers with the volume of broom cupboards faded out. The room has the final say. The Cambridge R50 better suited the average UK lounge, up to 18ft long or so.

But all this ignores one rarely mentioned benefit of big loudspeaker cones: they radically reduce bass distortion. I'm talking 3-5% or so from an 8in bass unit to less than 1% from a 12in bass unit our measurements show. Is this the reason why those big broom cupboards could, in a large room, deliver great sounding bass? I remember the Yorkminster's 12in bass unit hardly moved even when it was threatening to blow the walls down: it sounded relaxed, unperturbed.

Loudspeakers "went from square to rectangular" for good reason – but there was a price to be paid that no one talks about. Low distortion and clean bass. There's still nothing like a big cabinet if that's what you want. ●

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"Elvis is the movement. He is the darkness, with the power to corrupt"



Paul Rigby

There's a lot of bad press thrown at the Internet but there's bad press attached to any large organisation, large event, large service...anything that's big enough to be visible by a lot of people. There's bound to be negativity attached to something so all encompassing.

Lest we forget, though, there remain some wonderful websites out there, lots of informative social media pages and highly educational YouTube channels.

I was drawn to just one of those informative websites. It was part of a collection from a chap named Eric Wobbel. His site was packed with vintage items including an early-model calculator and laptop to a vintage Chicken Pie box from Birds Eye (oh yes) and a small reel-to-reel tape player by a brand called Many. A name that was new to me.

Yet, what stood out from the various vintage watches, toys and cameras, was a leaflet. A leaflet devoted to, but not lionising Elvis Presley.

It was – and still is – called 'The Evils of Elvis Presleyism'. It was written by Dr. David Otis Fuller.

The reason I found this item – a religious tract – interesting is not only because of the rather obvious, alarmist headline aimed at a man who would ultimately star in such cinematic schlock as *Kissing Cousins* and *Viva Las Vegas* (I did quite like the latter, I must admit) but, well something else.

You see, at that time, Dr David Otis Fuller was a prolific scribbler of religious tracts and other issues of import. He offered his religious and related social views across all media. Fuller served in the Navy as a Chaplain during WW2, founded Cornerstone University Grand

Rapids, was the editor for General Association of Regular Baptists and the founder and president of the Which Bible? society. Apparently he read the Bible 75 times before he died in 1988. He was a much respected and honoured man and was invited to talk at a range of institutions.

You can see an archival record of the man's work on the Internet. Fuller's files are listed in both sermons and boxes. In Box 7, there are writings devoted to one Elvis Presley.

Fuller didn't like Presley, as is pretty obvious by the tract's title. What gets me about this cover though is that the invective was aimed at Elvis. And in 1957.

By that time Bill Haley and his Comets had released the single, *Rock Around the Clock*, Carl Perkins had issued *Blue Suede Shoes*, Chuck Berry had already released *Maybellene*, Little Richard had released *Tutti Frutti* and more. Much more. In 1957, this was a mature and thriving musical genre.

The United States was in the midst of a musical revolution at the hands of a host of creative talents, both black and white.

And yet here was a highly-educated, well connected, well-informed man who saw none of that. As many other people in the USA of that time saw none of that. What Fuller saw, what many frightened families saw, was Elvis Presley.

What gets me about this religious tract is not that it targets the evils of rock'n'roll or even – in the modus operandi of the time – the evils of 'race music'. No, Fuller focuses only on something he calls "Elvis Presleyism". Elvis represents the movement. Elvis is the movement. He is the darkness. A man who has the power to

corrupt, according to Fuller. All on his own. Remarkably, here Elvis becomes an 'ism'.

I find that striking and a testament to Elvis' social importance in an already established musical genre, his dominant image in the society of the country as a whole (if Fuller is any kind of yardstick) and the threat he appeared to be, in 1957, to all God-fearing people of the time. Especially the children of those God-fearing parents.

Of course, I had already heard of the moral panic Elvis imbued via his rotating hips but it was fascinating to see material evidence of the same.

In his tract, Fuller describes Elvis as "uneducated". He calls his sideburns "grotesque" and his guitar playing style "crude". Possibly most significantly, the text notes Elvis as a "sex idol". A facet of Elvis that might be revealed to be the core of the entire problem. Fuller's problem. Middle America's problem.

It may be hard for some of us to fully appreciate – and yes I'm extrapolating like crazy but, viewing Fuller's position in the society of the time and his position as a spokesman for the crew-cut, respectable, middle of the road, consumer-friendly, super patriotic, momma's apple pie, conservative majority and if other anecdotes and stories about Elvis are also taken into consideration, Elvis Presley, back in 1957, was a terrible force to be reckoned with. One that shook the very core of an entire country.

Things would change later on but, at that moment, at that specific time, more than even the music itself, he was the danger. He was the bogey man under the bed. He was, in fact, the revolution.

So, yea. Go Elvis. ●

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"I discovered these guys thanks to cassettes they sold via Southend's Golden Disc record store"



Martin Pipe

Like many here, I like to trawl through charity-shop LP racks. It's amazing what turns up, and some real gems can be found if you spare the time (good causes benefit too!). Recent vinyl that has come my way includes LPs issued by the Disco Mix Club (DMC, <https://bit.ly/3mBnyx0>). A British subscription DJ-only organisation founded in 1983, the DMC rose to prominence through specially-commissioned remixes of tracks and cleverly-segued 'megamixes'. Club DJs would spin these to enhance their sets, and keep people on the dance floor.

DJ culture could fill a book in its own right, but a little history puts the DMC's activities in context. Once upon a time, the DJ's job was merely to play records and intersperse the music with chat. Indeed, on radio that's still the case. In clubland, though, dancers require a musical backdrop of appropriate rhythm (BPM). Across the Atlantic, club DJs active in disco's heyday would minimise the 'patter' and instead concentrate on mixing one record into another - two or more turntables were essential. To this end, their decks were varispeed types.

Hence the acceptance of Direct-Drives like the SL-1200, which Technics eventually redesigned specifically for DJ use. In the 1970s, though, one US venue chose a model that was hardly suited to disco use - the suspended-subchassis Thorens TD125. To improve feedback resistance, theirs were suspended from the ceiling! But there wasn't much choice around at the time. One of the first British clubs to follow the US mixing trend, Mayfair's Gullivers, opted for Garrard 401s and Lustre tonearms. Cartridges with spherical styli and chunky cantilevers were,

and indeed still are, the order of the day as they're robust enough to take the punishment.

Back then, soul and disco rhythms were provided by genuine human drummers. Great though they sound, their imprecise timing could cause problems when such records were being mixed. 'Beat clashes' are obvious when heard through several kilowatts of club PA...and they don't sound good! This limited the aspirations of early mix DJs. No surprise, then, that mixing took off when dance music became electronic with quartz-referenced synthetic drums (e.g. Roland's TR-808). Perfect timing forever...

One Manchester club DJ, Greg Wilson, became famous for spinning such music during the early 1980s. In doing so, he popularised 'electro' - a genre, imported from US, that established soul and funk DJs despised. Wilson's mixes became increasingly-sophisticated, and he bought a Revox B77 to use for 'loops'. Wilson mixed live on The Tube (<https://bit.ly/3ymMvhZ>), and taught future 'big-beat' legend Norman Cook how to 'scratch'.

Electro also radiated from pirate stations in British cities, as very little could be heard via 'legit' broadcasters. Herbie Mastermind, a prominent advocate of the music, was commissioned to mix the classic Streetsounds Electro albums. One of these, UK Electro (1984), was put together by Wilson...Herbie contributed too, via his 'Rapologists' pseudonym.

Into this scene the DMC thrust itself. My DMC clutch dates to 1988 and 1990, by which time dance music and mixing had gone mainstream. Megamixes had achieved new creative heights. Samplers, drum machines, keyboards and effects enhanced these productions, to the extent they

became artforms in their own right. Technics sponsored the DMC's World DJ Championships - first prize, a pair of gold-plated 'Twelve Tens'.

A Big Beat 'staple' was the 'Nine O'Clock Mix', usually a timely DMC effort...and essential home-taping! One of those 1988 megamixes came from the Mixbusters (<https://bit.ly/3yj7X7z>), a local duo comprising Steve Anderson and Jason Davies. I discovered these guys a year earlier, thanks to cassettes they sold via Southend's Golden Disc record store (Davies reveals that its manager "was extremely good at knowing what was going to be a hit"). Accompanied by a typewritten tracklist and rather uneven in sound-quality terms, the mixes were great fun and displayed considerable talent. Some 'Essex boys' would claim the Mixbusters work as their own, to impress girlfriends. No wonder the DMC snapped up the duo!

Yet the equipment at the disposal of these recent school-leavers was primitive. "We didn't even have variable-speed decks at this point", admits Davies. They did, however, have a "Hitachi Hi-Fi...and a really bad (Casio SK1) sampler". To accomplish edits, they relied on a venerable Technics top-loading cassette deck. As their 'day-jobs' were so poorly-paid, money was borrowed to acquire SL-1200s and an Akai sampler - equipment that gave later megamixes more polish. A reel-to-reel followed, as the DMC expected submissions in this format. The Mixbusters were staples of late-80s DMC albums, but there was a subsequent parting of the ways; Anderson went on to become a producer and musical director for acts like Kylie Minogue, Westlife, Steps, Leona Lewis and Susan Boyle. ●

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"messages about damaged crossovers, written by the owner when drunk, made little or no sense".



Dave Tutt

Some of the conversations I have with my customers are strange to say the least. In-depth thought processes about how the bass is there but doesn't really fill the room, why the vinyl sounds so different to the CD, why the cassette copies some three generations down don't sound like the original source are some of the things I get asked about.

Then there are those making their own music who don't understand the requirement to fit the levels inside the 16-bit capacity of the CD format by looking at the dynamic range of their original recordings. Or those that think what they record will make them a millionaire as everyone will want airey fairey lyrics going back to the flower power era – backed by overdriven guitars in full on death metal style!

I recently discussed a problem with a customer about getting more bass from his system as it seemed rather odd that his Bose sub wasn't pushing the room to any extent. I slowly learnt after over an hour on the 'phone that the sub was being driven from a Sony HST stacking unit from 20 years ago with its original toy speakers – and all in a room that was 2m x 3m with a roof that followed the underside of the stairs, like something from Harry Potter.

"Cupboard" would have been a better description of the space. By the time he had squeezed himself into his special listening chair next to the electricity and gas meters it must have sounded pretty horrid!

I didn't think there was a lot I could do to help him. My guess would be that the bass outside the room was significantly louder as the room space would have

acted as a resonator around 100-180Hz and the neighbours would have heard far more bass than he did. He would have been sitting in a standing wave inside the area before the bass forms a wave front that can actually be heard. Great way to get a headache though.

Needless to say he wasn't allowed to have a music system in the lounge, so my suggestion was to convert the unused brick built garage at the end of the garden into a proper listening room and buy some decent gear. This was yet another hour out of my life with no pay – and now he has my e-mail address I guess I will be typing instructions and advice again for free... oh well!

Then there was the customer who wanted to play old 78s and he had a record deck to play them on. OK, that's a good start. Thing is, the deck was a 1950's Collaro with a BSR X3 ceramic cartridge feeding into a Denon amplifier's phono input. No match here at all.

The BSR X3 needs a high impedance input stage, around 1MΩ is a good start in this instance – and of course an old ceramic is not designed to work with RIAA equalisation. He said the amp kept cutting out and it was seriously distorted. Unsurprising.

Moving the turntable to the Aux input tamed it a bit and stopped it cutting out but it was still not a nice sound – and that was without the unknown quality of the 78s which I understand were from Elvis and Bill Haley.

I made an adaptor so that the mono output would go into both channels on the Aux input. Then I fitted the correct loading for the BSR so that it would be reasonably OK – if not perfect. As it was in Wales and I wasn't planning

on going there – and certainly not during lockdown – my tests were at an academic guess work level, not a practical audio tested solution. Sent the thing off and 20 weeks later I have had no reply to e-mails nor any sign of a payment yet. Oh well...

I recently had deep and meaningful conversations about a pair of damaged crossovers along with a collection of text messages written by the owner when drunk that made little or no sense. These units had been custom made for a pair of 'speakers and were externally mounted to the cabinets.

Like a lot of so called custom and expert hardware they left rather a lot to be desired. Poor wire, resistors jammed under large polypropylene capacitors. There were no terminals to connect the in and out wires and all assembled on some off-cuts of plywood from old furniture, with holes drilled through to mount the components.

When they arrived with me they had to be rebuilt and altered to make them more practical. Capacitors cost me £45 for their nearest but better equivalents. Resistors were replaced with higher wattage wire wounds, and the terminals all remade with 4mm banana sockets so you could get decent wire into them: the crossover wiring was all doubled in thickness. That was 2 years ago and my payment has shown no sign of arriving.

Life and especially work I find has a way of telling you that you are never going to win and – aside from going to court to try to get your money – you have to face the fact that people don't value any service they use – so then abuse. Like mine. ●

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THE TIME

The Time
Rhino

Packed full of talent that would go on to greater things, this was the first side project backed by Prince. Released in 1981, it has his fingerprints all over it. Rumours say that Prince song-wrote, sang and played on most of the LP although the credits don't back that up. Jamie Star (a Prince pseudonym) is there as engineer and mixer, though.

This is a supremely melodic outing, full of hooks and head nodding funk beats, infused by the spirit of the Purple one himself.

A double album of just six tracks, they feature extended synth-funk outings of high quality. In fact on par with Prince's own solo work of the time.

The original mastering was completed by the master himself – Bernie Grundman, while the remastering has been finalised by Bill Inglot and Dan Hersch at D2 Mastering (website motto 'Analog

or Death') so expectations were high for this one.

And it doesn't disappoint. In fact, I find it fascinating. This remaster offers very low noise which allows you to push up volume to extract as much detail as possible.

What impresses and intrigues me about this recording is how the room has been mic'd up. At least, that's the effect I'm hearing. There's a real tonal balance here, an extreme evenness in the presentation. You really feel that everyone - vocalists and instrumentalists - are getting a fair crack at this. No-one is being left behind here. Everyone can be heard. That also means that a dedicated lead vocal can be a little distant. So there's a downside to this set up. Nevertheless, the LP is a ensemble piece that gives the songs a full, rich and expansive feel. Pop fans will love it, Prince fans will see it as an essential purchase.

AUDIOPHILE VINYL



ERIC CLAPTON

Eric Clapton
Polydor

Clapton enjoyed his time touring with Delaney & Bonnie. With them, he found himself able to relax. He could step off the stressy, star-like treadmill, kick back, relax and just play the music he loved. Which is why he involved the pair in the making of this release. Delaney & Bonnie are all over the song credits on this 1970 LP. As are most of Delaney & Bonnie's backing band. The album itself is packed with country, gospel and R&B, with a smattering of blues.

On this release, Clapton did what he would often do in the future, frustrating many fans. That is, he would contain himself, restricting the flashy guitar side, the part of him that shot to fame. The part that was lauded by many. Was this LP a reaction then, to that 'Clapton is God' thing? It seemed so from the output on this album.

Despite Clapton putting a lid on Clapton, there's much

here for fans to slaver over and includes staples such as Let it Rain (Bramlett & Clapton) and JJ Cale's After Midnight.

In terms of mastering? There's that signature, slightly cotton wool-infused over-arching sound across the album as a whole. That slight 70s damping effect that is often described as the 70s 'glow'. It's comforting and cuddly and sounds very much of the time.

Which doesn't mean that detail and insight is neglected. Not at all. There's plenty of that here. Harmony backing vocals sound emotional and textured while slightly shy secondary percussion effects, such as a lonely tambourine, are easily picked out by the ear. There's depth and width across the soundstage to accompany the, again, iconically rather soft drums and rolled-off brass effects. As a period piece, it offers a goodly blend of information and atmosphere.

This album saw a change in the band or, rather, a change in how the band wanted to approach music and their song-writing within. There was both a whimsy and a nostalgia in this project but also a definite seriousness. One that might not have been previously associated with the nutty boys from Camden.

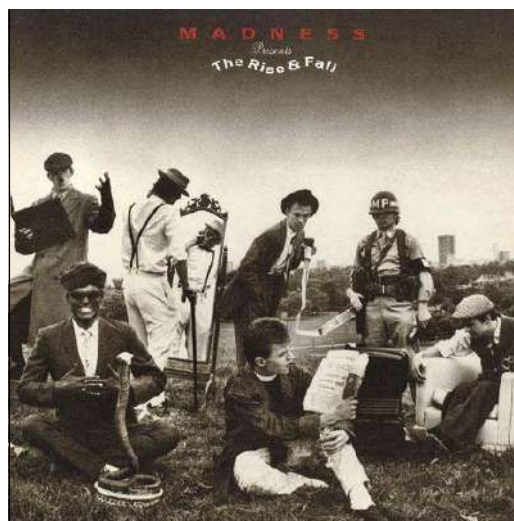
Take the title track which reflects on times past, places of one's youth revisited. It's also reflective of changing times and the divisive politics of living in the UK at that time because it's partly written by Suggs after he had witnessed the riotous aftermath and wreckage in Liverpool (a place and a time I remember well, I was eighteen and living in the middle of it). This was 1982, after all.

'Blue Skinned Beast', meanwhile takes a similarly serious look at the wider society

in Britain by focusing on the Falklands War and body bags emerging from the same.

There is, in short, a real maturation in the band's song-writing. This is a suite of songs about people and the places they lived and worked and played and died in and for. This is the album where the hit single, Our House, lived. The epitome of nostalgic reflection and pop perfection.

In general terms, I like the mastering. The noise is relatively low, soundstage is comparatively wide, there's plenty of upper midrange detail on offer and frequency discipline overall, is good. There is a slight compressive feel across the music, I have to add. I'm sure its been added as emphasis, to lift detail for your delectation. There is a touch of sibilance here and there Tomorrow's (Just another Day) being one example. The addition of the compression is not a problem although it is there.



MADNESS

Presents The Rise & Fall
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AUDIOPHILE VINYL

A Deluxe Edition of the big, bold, storming, sprawling, 1999 glam-rock-prog debut from Ultrasound. In fact, the mixed media box set maintains the flavour of the music itself.

The reissue features 'Everything Picture', the original double album – but that's not all. An extra two slabs of vinyl in the packaging feature a variety of B-sides and singles. There's also a CD that features both live and session tracks. Finally, you'll also find a twenty-six page booklet and poster.

If you trot over to the OLI Records website store you can also receive a signed 10" x 8" print of the band, taken during the original album campaign. This is an exclusive addition, only available from the site.

I found it funny that the band were conscious of their audience at the time of the album's release.

A post-Britpop audience, mind you. Scary people, for sure. "We were aware that the post Britpop presence of the early millennium might not get it" exclaimed vocalist Andrew 'Tiny' Wood. "Many did and many more grew and developed with it as it grew and developed a life of its own".

As for the mastering? I like it. It's very good indeed. If I was being greedy, I would have liked to have seen/heard a slight lowering of the noise floor and slightly more open soundstage but look, I'm being terribly picky here. As it is, the presentation remains excellent with a good level of both transparency and clarity. Detail translation, such as the plucking of the bass guitar strings, was impressive while some of the lead guitar work was atmospheric indeed in terms of dynamic reach. Magnificent, grand and imposing music with pomp and majesty all of its own, in a lovely package.



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The art of noise (cancelling)

Can French high-end specialist Devialet hit the spot with their first noise cancelling in-ear headphones? Chris Frankland finds out.

French high-end specialist Devialet is best known for its ellipsoidal Phantom wireless speakers and amp/streamer/DAC units that sell for as much as £25,000.

Their £279 Gemini Bluetooth noise-cancelling wireless in-ear headphones are its first foray into that market and are bristling with technology.

The Geminis are well made and nicely finished, supplied with a carrying case/charger and a range of different-sized ear pads. Choose the one that fits your ear best as that will ensure not only the best sound quality but also that they do not keep falling out. Once I twisted them in, I found them

secure enough.

We can thank the military for noise-cancelling headphones. They were invented during the 1950s for aviation use but the first commercial models, from Bose, did not appear until 1989. Now the technology helps stressed-out commuters block out the sound of their train or traffic noise.

The active noise cancelling (ANC) in the Gemini uses one internal feedback microphone to sense the noise entering the headphones, plus an external feed-forward one to measure the noise that is about to enter them (very effective, apparently, at reducing high-frequency noise). Devialet believes it achieves the best possible result with a hybrid of the two

methods and the system is said to reduce noise by up to 40dB. It certainly seemed effective to me.

The Gemini also have Devialet's patented Ear Active Matching technology, said to automatically adapt several thousand times a second to best suit the shape of the user's ear canal.

Devialet have included Internal Delay Compensation that allows for the effects of the noise processing filters, which are less efficient on medium and high frequencies. And the third in its trio of hi-tech offerings is Pressure Balance Architecture – a three-vent decompression system that is said to optimise sensitivity at low frequencies. It also uses meshes to dampen internal sound propagation.



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BRIDGING THE GAP

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• CHORD •
Chord Electronics Ltd.



Case is not only a charger but also controls Bluetooth pairing.

Central to the design is a 10mm moving coil Devialet driver claimed to have a bandwidth 5Hz to 20kHz.

Battery life for the earphones is said to be six hours. After two hours of constant play, I found they still showed 70% charge.

The company offers an app to make the most of the Gemini and I would say don't even think

about not using it. Without it, the headphones out of the box seemed to default to noise cancelling switched off and only once I installed the app did I get full control. And trust me, you want it on. I found that default 'Neutral' (ANC off) mode (you only see this on the app) the sound was poor – thin, fizzy, no bass and thoroughly unsatisfying. With ANC on, the sound improved by leaps and bounds, had more bass weight, allowed voices to bloom and lost the tinny edge to drums and percussion.

The app allows you to switch to either Transparency mode (high or low), which is designed to let you adjust how much of the sounds of outside world you wish to let through, or Cancellation mode (high, low or plane). After exhaustive listening, my clear favourite was transparency/high, which gave the best balance of dynamics, bass weight and top-end delicacy.

The app also has a useful graphic equaliser function, allowing $\pm 6\text{dB}$ of adjustment centred at 80Hz, 125Hz, 400Hz, 1.25kHz, 4kHz and 8kHz. I ended up with a slight push at 400Hz, a tiny cut at 4Hz and a small push at 8kHz. But the sound was still good when left flat. You must decide what works for you and your ears, but the equaliser is worth investigating.

SOUND QUALITY

First impressions of the Gemini set up properly through the app

were excellent. The sound was coherent, dynamic, with good bass weight and delicacy and presence on percussion and drum kit.

Hooked up to my Samsung smartphone on Tidal, I played the superb Build Me Up from Bones by Sarah Jarosz. Her voice was beautifully open and articulate, her mandolin had bite and presence and the subtle violin and cello play in the background was laid bare to enjoy.

On the dynamic and funky Saxophonic from sax ace Dave Koz, the track came across with all of its intricacy, power and momentum.

On a fave Ben Sidran track, Broad Daylight from The Doctor Is In, the Gemini captured the body in



Choosing the right size of earpad ensures not only a tight fit in the ear but also the best sound quality.

his voice and piano play and moved the music along well with great bass weight and rhythm.

I briefly compared the Gemini with a £169 Sennheiser Bluetooth model, but the French newcomer showed the German a clean pair of heels, with the latter sounding thinner and less open. Bass lines were fuller and more tuneful on the Gemini. Even compared with a well-respected Meze wired model at £229, I preferred the Gemini for its openness, dynamics and lack of colouration or boxiness.

CONCLUSION

The Devialet Gemini turned in a superb performance and is outstanding at its £279 asking price, seeing off even respected wired models. Use the app, tweak it to your liking, and you will not be disappointed.



Gemini is supplied with a sturdy charging/storage case, charging lead and earpads in various sizes.

DEVIALET GEMINI
£279



OUTSTANDING - amongst the best.

VALUE - keenly priced

VERDICT

Great sound and great functionality combine in a beautifully made package that is well worth a listen.

FOR

- excellent sound quality
- well made and finished
- good battery life

AGAINST

- sound poor with noise cancelling off
- instructions rather minimal
- need to 'twist in' securely so they don't fall out

Devialet
www.devialet.com



Up and down

Martin Pipe remembers the Sanyo Plus N55, a device that could 'supercharge' analogue recorders with its 'Super D' process

By the end of the 1970s, Dolby B was pretty much standard on any cassette deck with quality pretensions, to suppress tape hiss. It provided around 10dB of noise reduction at the treble end of the audio scale. Also available at the time were PCM units that allowed the well-heeled to make their own digital recordings. These harnessed the impressive capacity of domestic videotape, which at that time was something new and expensive!

How could analogue recording be brought into this new era of digital? From the industry came the answer – add-on 'companders' that would not only kill tape noise, but widen dynamic range right across the audio band, with cassette or reel-to-reel.

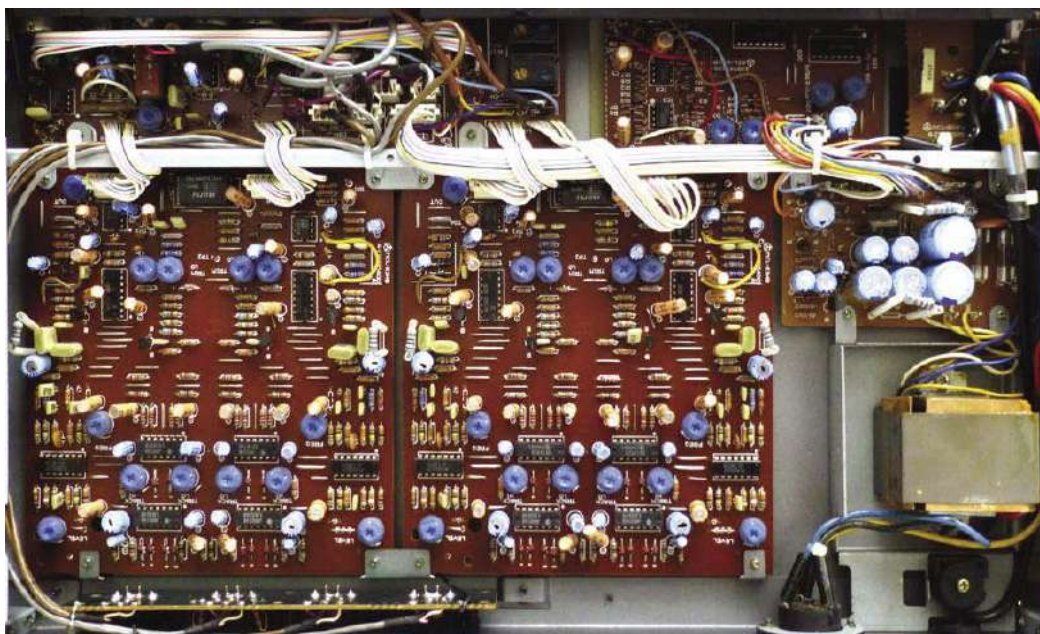
Comping, a contraction of 'compressing' and 'expanding', neatly sums up what the system does. The dynamics of the original

music source are 'squeezed', so they can be accommodated by a recording or transmission medium of restricted dynamic range. With tape this is the region between the noise floor and the magnetic 'saturation' overload ceiling. Circuitry built around voltage-controlled amplifiers (VCA) automatically raised the levels of quieter passages and lowered the levels of the louder ones during the record process. Upon replay these changes were reversed, thereby restoring the original audio – with its full dynamic range intact.

Dolby B is a simple compander, but its action is rather mild. That's why cassettes encoded in the system sound acceptable on non-Dolby playback decks. JVC's ANRS (and subsequent Super ANRS) were Dolby B 'sound-alikes', intended to circumvent patents more than anything. First of the genuinely new broadband companders came from dbx –

DeciBel eXpansion. It worked by compressing the original audio's dynamic range by a factor of 2:1. A live concert might have a dynamic range of 100dB. You'd be unable to capture that on analogue tape, even with the very best machines. Reduced to 50dB, though, it could be accommodated by even modest hardware. During playback, a decoder expands the dynamic range from the recorded 50dB back to the original 100dB, providing a useful 30dB of noise reduction in the process. dbx was pitched as a professional system for studios (Type I), but a consumer variant (Type II) became available.

dbx's efforts proved there was a market for more effective companding noise reduction systems. By the early 1980s, recording enthusiasts and audiophiles had been treated to a slew of other proprietary standards – High-Com/Telcom (Telefunken),



With the obvious exception of some components - the fluorescent display, mains transformer and casework - the N55 relies on off-the-shelf parts, like the NE570 and standard op-amps. Repair is usually a practical option.

MXR Comander, Adres (Toshiba), Super D (Sanyo) and the then-new Dolby C. Despite their fundamental similarities, these systems were however different enough to be mutually-incompatible with each other.

Many buyers instead opted for 'add-on' units, which elevated the S/N ratio and dynamic range specs of an existing cassette or reel-to-reel deck to near-digital levels. More affordable small-spool reel-to-reel decks featuring slower speeds (9.5cm/s or lower) were natural partners for these boxes of tricks. A 7in. spool of long-play tape could run for 90 minutes with no interruptions whatsoever at 9.5cm/s. Unaided, it could be rather hissy. Companding however made it a serious contender, especially for genres (like opera) that would benefit from the wide dynamic range and near-absence of noise.

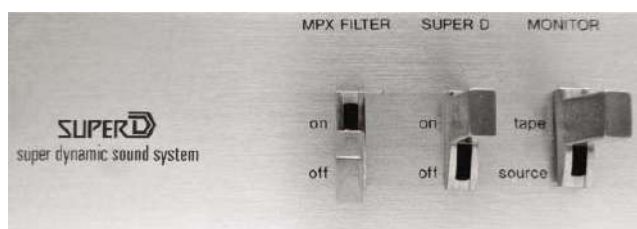
All of which brings me to the rather neat Sanyo Plus N55 Super D ('Super Dynamic Sound System') add-on compander featured here.

Originally designed to complement some very tasty rack systems that the Japanese firm introduced in 1979 – statement products to prove it could be a serious hi-fi manufacturer – the N55 was probably the most successful component of the range. Indeed, these units crop up regularly on eBay and at collectors' fairs.

From what I can gather, a fair few were sold off cheaply through specialist discount stores after Sanyo pulled out of the hi-fi game. They were snapped up by tape enthusiasts, musicians recording at home and budget studios seeking affordable alternatives to dbx and Telcom for reducing the effects of multi-generational noise build-up. The one you see here was used to timeshift Radio 3 concerts in conjunction with an Akai reel-to-reel, a task it performed very well.

The N55, being a fairly serious piece of kit, has separate encoders and decoders that enable off-tape 'confidence' monitoring with a three-head deck. Rear-panel

phono sockets allow the unit to be inserted between tape deck and amplifier. Some noise-reduction systems require special tapes for calibration. Not so the N55, which has an inbuilt 1kHz test-tone generator. The tape machine



A switchable multiplex ('MPX') filter will prevent tuner 19kHz pilot-tone 'leakage' from wreaking havoc on the encoding process. A 'source/tape' switch allows users of 3-head decks to compare recording with original, while the middle switch disables Super D altogether.

is set into its Record mode and its recording levels set so that they peak at -5dB on the Sanyo's fantastic fluorescent bargraph meters. From then on, recording levels are set with the concentric controls set into the NR55's front panel. Adjust the deck's own recording-level controls by mistake, and you'll need to recalibrate!

Next, the recorded test-tone is played back and the recessed 'play level' trimpots adjusted – in conjunction with the deck's output control, if need be – so that the N55's meters themselves register -5dB. Now, you're good to go! Super D is internally



The rear-panel phono sockets allow the N55 to be easily 'inserted' between tape deck and amplifier. No balanced XLRs here...although the unit did find its way into some home studios.

ifi

ZEN Stream

Wi-Fi audio transport

ZEN CAN

Headphone amp

ZEN DAC V2

USB DAC and
headphone amp

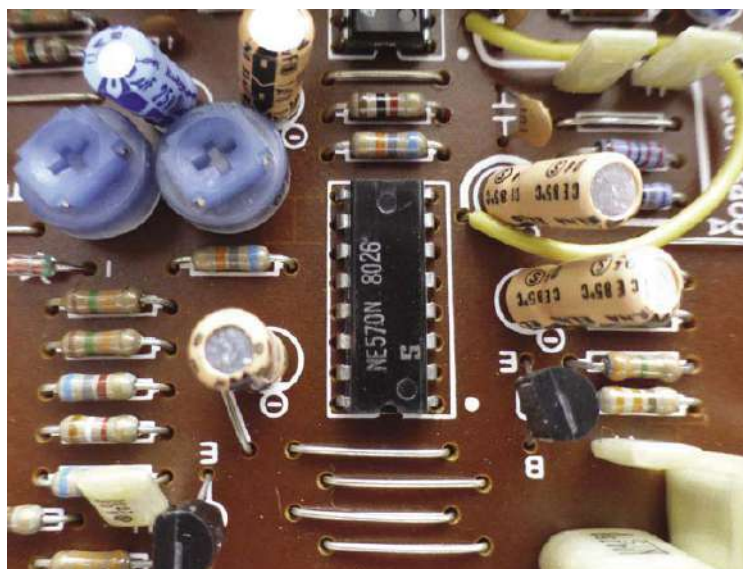
ZEN Phono

MM/MC phono stage

ZEN Blue V2

Bluetooth DAC





The Signetics NE570 dual compander chip is used in a number of mutually-incompatible companding noise-reduction systems. Inside the N55 are four such devices, for high- and low-band encoding and decoding across two stereo channels.

more complex than some of its competitors, operation being split into two separately-processed bands that cross over at approximately 5kHz. Like most processors of its type, though, it relies on the NE570 dual compander – a chip that's still available today. It contains level sensors that monitor the signal source, and instantaneously-control the gain of a VCA that reduces or expands the dynamics according to configuration.

There are four such devices in the N55. Two look after the high- and low-band encoding of the two stereo channels, and the other two – on an adjacent circuit board – work correspondingly for the decoding side of the operation. They are supported by a multiplicity of devices (mostly standard op-amps). Other circuitry includes meter drivers and a switchable multiplex filter, the job of which is to prevent an FM tuner's residual 19kHz pilot tone from wreaking havoc on the encoding process. Muting relays eliminate switch-on thumps, and source/tape switching allows you to compare the original signal with the one that has been committed to tape (and passed through the Super D processing chain).

The big problem with analogue companding systems is that they can often be heard working, especially with simpler source material – solo piano and speech in particular. The effect, in which noise levels fluctuate with

signal level, is known variously as noise modulation, 'pumping' or 'breathing'. Naturally, 'hissier' media compounds the problem. To reduce it, treble pre-emphasis (as much as 12dB per octave at higher audio frequencies in the N55) and corresponding de-emphasis were designed into the encoder and decoder stages of companders.

Also annoying in terms of audible artefacts was a companding hi-fi audio system designed for VHS, which could often be heard as an annoying 'farting' noise. The same system (and indeed the same chips!) were used to provide two of the audio four channels in a professional videotape system called Betacam. Used widely throughout the 1980s and 1990s, you can often hear it when archive material is broadcast on TV!

It's a pity that the designer of such equipment didn't instead specify a system like Super D for its sound tracks, as it fares much better in this important regard – the 'complementary band division' was apparently conceived by Sanyo's engineers to all but banish the problem.

Widened dynamics and elimination of hiss are almost magical – as switching out the process reveals. I know what most users would prefer, especially if they're reliant on slow tape speeds. I was quite startled at just how good a reel-to-reel tape running at 9.5cm would sound; trying the thing with a Philips N7150 deck

running at the cassette speed of 4.75cm/s with decent Maxell tape stock gave results that were far better than expected. Sure, there's an obvious drop in treble finesse and breathing is more evident, but much of the music emerges. Super D cannot however help with drop-outs and increased wow-and-flutter that are more likely at slower speeds.

Super D, and systems like it, only made sense if you were recording music with a wide dynamic range in the first place – audiophile LPs, your own live material and concerts broadcast on FM (a medium that, with the exception of Radio 3, sounded considerably better in the 1970s and 1980s than it does today). Modern-day radio and compressed rock music from noisy LPs are unlikely to benefit. In this digital age, though, such matters are rather academic.

Products like this, and the analogue recorders they were partnered with, were eventually rendered obsolete by digital recording. The present-day market for them tends to consist of archivists who want to digitise tapes encoded with proprietary



These recessed 'play level' trimpots form part of a calibration procedure. They're adjusted with a flat-bladed screwdriver during playback of the recorded 1kHz test-tone, so that the N55's fluorescent bar-graph meters register -5dB.

companders, or enthusiasts heading on 'nostalgia trips'. Software decoding of some companders is already with us, although to the best of my knowledge the Sanyo system has not yet been 'emulated'. For those with Super D-encoded tapes, it's perhaps just as well that N55s are fairly inexpensive to acquire (between £50 and £150) and repairable thanks to their reliance on off-the-shelf parts.

vinyl section

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**STAR WARS**

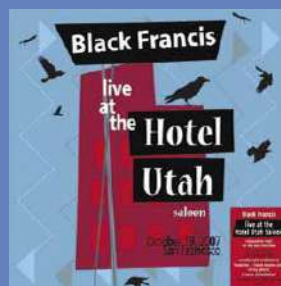
Actually, 'The Empire Strikes Back' by John Williams, a formerly long out of print 1980 reissue via Varèse Sarabande (www.varesesarabande.com) complete with wonderful sleeve art. Presented in a gatefold and pressed on "Imperial Grey Marble", it is limited to 1,500 copies.

CINEMATIC ORCHESTRA

A reissue of 2007's 'Ma Fleur' (Ninja Tune: ninjatune.net) on limited-edition clear vinyl includes three bonus tracks and four art cards. It's a sort of sound track of suites to an invisible film, a dramatic production featuring vocals via Fontella Bass, Lou Rhodes, and Patrick Watson. Heavy-handed and self-indulgent.

**DEACON BLUE**

The 30th anniversary release (on yellow vinyl) of the pop rockers, 'Fellow Hoodlums' spawned three charting singles and offered a lofty array of pop with a slight soul infusion and often deeply emotional lyrics to boot.

**DEMON**

Sometimes Frank Black but here, Black Francis — lead singer for the rock band The Pixies and 'Live at the Utah Saloon', a concert from San Francisco on 9 October 2007. This double, red vinyl pressing, previously only available on a limited-edition USB stick, covers songs from Black Francis, Frank Black and The Pixies catalogue.

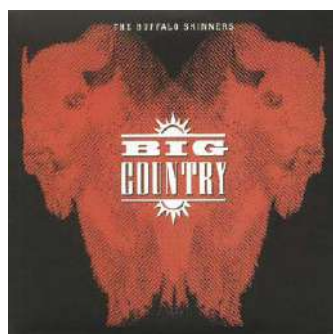
Released as a luxurious pizza-style box set, M People's 'Renaissance' features a signed copy portrait by Mike Pickering, Paul Heard and Shovell. All of the band's albums are here with their original sleeve artwork and over different coloured vinyl: 'Northern Soul', 'Elegant Slumming', 'Bizarre Fruit' and 'Fresco' plus an exclusive 12", remixed by Sasha and featuring 'Someday' and 'How Can I Love You More?', available commercially on 12" for the first time.

King Tubby's 'Majestic Dub' (1983) is the first vinyl reissue of this ten track dub set. Produced by Bunny 'Striker' Lee, it was mixed by Lloyd James aka Prince Jammy at King Tubby's in 1980 and features Sly & Robbie, Santa Davis, Earl 'Chinna' Smith and more.

Also look out for The Best of The Psychedelic Furs (eleven tracks and new liner notes), the Average White Band's 'Cover to Cover/Soul to Soul' a best-of compilation plus a new entry, The Isley brothers 'Harvest For The World', the band's 2017 recording on vinyl for the first time.

BALCONY LULLABIES

Look out for jazz artist Mikel Ploug's 'Balcony Lullabies' (Stunt) created when Denmark was in lockdown. Ploug would serenade the surrounding houses from his balcony with guitar lullabies in an attempt to fight the distancing and solitude of that time. Lovely.



BIG COUNTRY

Two new outings on Chrysalis from the classic pop rockers. Firstly, 'The Buffalo Skinners' (1993) on double vinyl with a gatefold is a stripped, back-to-basics pop/rock outing. A sort of 'Please Love Us' to the American market that never took off but fans will appreciate the direct, well-crafted songs.

Also look out for 'Without a Safety Net', the complete Glasgow Barrowlands 1993 concert in both acoustic and electric forms, newly remastered and set in a multi fold-out gatefold.

BEAR FAMILY

Two from the German audiophile label, Bear Family (www.bear-family.com) includes 'Hell in the Barn – Live' by Lou Cifer and the Hellions. Including a sixteen-page booklet and twenty-four track CD, this is the rock'n'roll band's first live release to celebrate their 25th anniversary.

Stepping back in time now and 'Blue Moon Keep on Shining' a 10" compilation of Blue Moon and Bella catalogues featuring twelve pure rockabilly tracks from the likes of The Savoyes, Chuck Royal & The Sharpsters and Toby & Ray.



QUINCY JONES

'The Dude' (1981; A&M) has hit its 40th anniversary. Blending latin, soul, jazz and more in a smoothly produced whole from 'Ai No Corrida' written by Chaz Jankel of Ian Dury & The Blockheads to the soul ballad of 'Just Once'. Massively successful at the time, this one's slick and cuddly.



...AND FINALLY

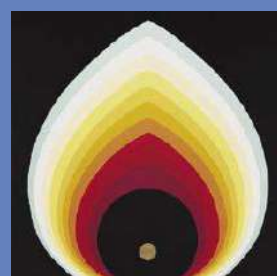
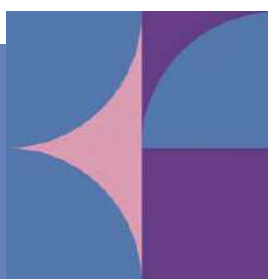
Check out chiropractor (oh yes), Dr Robert Blackman's 'The Unimaginable DreamWorks' (drrobertblackman.bandcamp.com). Five disco funk tracks released between 1983-1985 on the 'Riverwinds' imprint featuring diverse and locals musical talents. Crazy wonderful.

Two from Vampi Soul (www.munster-records.com) include 'R&B Hipshakers Vol.5: Rocks in Your Head' featuring early soul from the King and Federal vaults. Cracking songs from Roy Estrada, Albert King, the 5 Royales and more. Plus Helena Meirelles' 'A Rainha Da Viola Caipira' (once included in the Top 100 World's guitar players by Guitar Player Magazine). This Brazilian folk outing produces sparkling acoustic work. Guitar-wise? This old lady? She'll kick yer butt.

K.D.A.P.'s 'Influences' (kevindrewmusic.com) is Kevin Drew's 8-track, solo instrumental electronic project. A thoughtful, musing series of considered beats for walking meditation.

Lo'jo's 'Transe De Papier' includes the gravelly voice of Denis Péan, harmonies of the Nid El Mourid sisters, violin and bass and others. French folk? I'm not sure. It's certainly different. Both Tony Allen and Robert Wyatt guest.

The Fjords' 'Hidden Soul of...' (NXN; nxnrecordings.no) is described as a Norwegian 'Elemental-Sonic Soundscape' of ambience and vocal plus organic solos. Mixing neo-classical, electronica and found sounds with a dash of choral-expanded Enya-esque vocals, this is an engrossing production.



Take The Tube

A tube phono preamplifier from Audio Research has Noel Keywood intrigued.

Billed as a “vacuum tube phono preamplifier” the PH9 from Audio Research lies in the company’s Foundation Series, “offering stunning playback value” they say. What this means is the PH9 offers top sound for a relatively low price of £9,498. OK, that isn’t low to most of us but look inside and the picture changes. It’s a very specialised if

peculiar design, quite different from all else. So I’ve got a lot to say.

Strange that Audio Research of the USA have little to say. The PH9’s design philosophy gets no look in on their website or User Manual – but it’s unusual. For example there is a valve (tube) power supply – virtually unheard of in a Phono stage. We found with World Audio Design amplifiers that a valve power supply was always

preferable but they are big, bulky and expensive. Audio Research use a high power 6550 valve inside the PH9, acting as a series regulator, plus a low power 6H30P controlling it. You can see both in our pictures.

The size and complexity of the power supply explains use of a rack-mount sized case. Quite obviously the case is chock full of specialist parts that go to explain



price as well as size.

More conceptually challenging is the fact that gain is fixed at a quoted 58dB for MM and MC cartridges, that pass through the same circuitry. Audio Research make no distinction between the two other than to switch in different loads on the front end. They say nothing in the literature about this peculiar approach. By using a compromise value, gain is low for moving coil (MC) cartridges but very high for moving magnet (MM) cartridges. Whilst gain is quoted as 58dB we measured 55dB, where 60dB is usual for MC.

What this means in practice is volume must be turned up on an accompanying amplifier if an MC cartridge is used, and down if an MM cartridge is used.

of gain to make up for its shortfall with MC. There are no XLR-socket balanced outputs or inputs, just unbalanced phono-socket pairs. However, it seems the amplifier is fundamentally balanced, as I'll come to explain.

Input loading options are 47k for MM and 1000/500/200/100 Ohms for MC, all standard values. Most MCs work into 100 Ohms but high output types need a higher load of 1000 Ohms. Cartridges like this are another way to make up for the PH9's lack of gain with MC. Dynavector 10X5 series and Clearaudio MC cartridges come to mind as suitable.

The big C-core mains transformer, banks of smoothing capacitors and two power supply tubes occupy much of a case whose dimensions are 450mm (18in) wide with overlapping 483mm (19in) wide front panel. Height

circuit defeated, there's a Mono button and a Mute button, both repeated on the remote control. Audio Research also provide a tube hours counter with readout, but at 2000hrs for the 6550 and 4000hrs for the 6H30Ps there's a lot of listening available before a change is needed. At 2hrs per night that's 1000 nights or nearly three years. A remote control covers all these functions too, including power switching.

I had to stare very closely and have a head scratch over the internal circuit arrangement. There are numerous transistor pairs in the input stage, six of which are encapsulated into clear plastic containers that I can only assume are used for vibration damping as there are unlikely to be heat issues. As all discrete devices are in pairs I assume they are differential pairs, as I have used for a solid-state phono stage using LSK189 FETs (a rare device flown in from Texas by Mouser). The idea was to reduce noise in a fully balanced design, and eliminate input bias currents passing through the cartridge by use of FETs. Looks to me like Audio Research are using the same topology here, suggesting this is internally a fully balanced phono stage, but they use a chassis-grounded input socket I found, making it unbalanced.

Likely the PH9 is a cut-down single-box version of their Reference Phono 10 that, they say, uses "extremely low noise FETs".

The extensive transistor input stages hand over to three 6H30P low noise twin triodes, making this a hybrid design. Alongside are six large audio-grade foil capacitors. The tubes feed the output sockets, likely configured as cathode followers, output impedance being quoted as 200 Ohms. Because the output devices are tubes the PH9 can swing 50V out and is almost immune to overload, allowing an MM to be used in an MC environment because there's an 86mV input overload ceiling – way above the 30mV an MM can produce.

SOUND QUALITY

This being a "tube" phono stage I inevitably started out using our Icon Audio Stereo 30SE



There's normally x10 (20dB) gain change between the two, but not here. Considering the PH9's specialist nature it's best to look at it as an esoteric MC phono stage with low gain, it's ability to cope with MM being an extra, as it were.

In keeping with such simplicity there is no on-board volume control, nor any way to trim gain; the PH9 needs an external preamplifier with good amounts

is a substantial 165mm and depth not inconsequential either at 370mm excluding handles. Luckily, weight is a reasonable 7kg so it can be swung into place without effort, helped by the big frontal grab handles.

Switch on brings up a 2 minute delay that's long and tedious; electronic circuits stabilise within seconds and valves are in suitable working condition after 30 seconds. When the flashing Mute light finally goes out the green dot matrix display becomes accessible with an array of user options. Cartridge load can be set as already explained, an automatic power-off



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2M



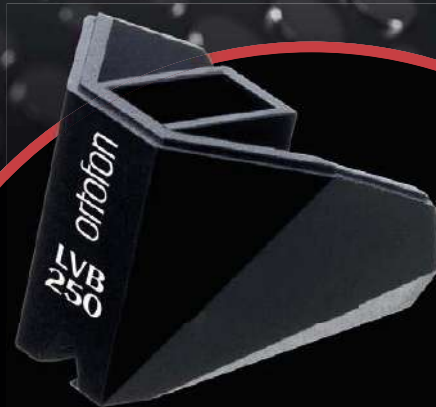
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Looking down at the PH9 shows that two-thirds of circuit board area at left is devoted to the valve (tube) power supply. A quality C-core mains transformer dominates (bottom left) and there are banks of smoothing capacitors above it.

single-ended valve amplifier with it, not just to match the sound but also to make for a minimalist system. However, the PH9 has an even and neutral delivery that equally suited both our Creek Evo 100 amplifier and a pair of McIntosh MC830 power amplifiers, fronted by a Music First Audio passive preamplifier – again for the simplest signal path. Loudspeakers were Martin Logan ESL-X hybrid electrostatics connected by Chord Company Signature Reference screened cables.

I suspect the PH9 will see use mostly in Audio Research systems for which it has been designed – and we're talking tubes here, but with a punchy sound. Vinyl replay

humanly convincing. What I picked up on very early in listening was superb sound staging, singers like Jackie Leven – who was a big man – sounding so when singing. With The Beatles however, their complex orchestral arrangements were unravelled by the PH9; John and Paul had depth and texture to their voices in tracks like Polythene Pam and the startling She Came In Through the Bathroom Window. In its own way the PH9 teased out drama here by making instruments and vocals weighty and richly textured. Sun King was suitably dreamy, nicely framed by clearly focussed guitar chords left, right then drifting across the stage. Martin Logan's line-source XStat panels were a perfect match, since they too can image fabulously when fed a good source – and this is what I was hearing.

It had to be that the violin of Marianne Thorsen would come out well and here the PH9 moved into top



The 6550 power tube, popular in the US where robustness and low price make its use widespread.



A 6550 beam tetrode that acts as a voltage regulator. Why do this? Because tubes give a deep, smooth sound when used in a power supply.

came from our Timestep Evo modified Technics SL-1210 Direct Drive turntable with SME309 arm and Ortofon Cadenza Bronze cartridge, plus Audio Technica OC9X SH moving coil cartridge.

Much as expected, the PH9 was deliciously clear and neutral in basic nature, having an almost ethereal quality about its sound. Our Abbey Road re-master of Here Comes The Sun was a suitable way to appreciate it, The Beatles sounding boldly embodied in front of me, their harmonies forming a rich tapestry that was

gear, showing what it was capable of. With Mozart's Concerto No4 from our 2L (Norway) LP (180g from Direct Metal Master, 352.8kHz DXD recording) there was a sense of intense richness and detail within the strings. At start her violin came over as bigger bodied and more richly expressive than I am used to, but there was both speed and cutting precision in there too. Making for a listen that had my attention gripped. I love her playing and the PH9 lifted out every nuance, plus every rich harmonic.



Even the 6H30P regulated power supply control tube has a damping ring around it.



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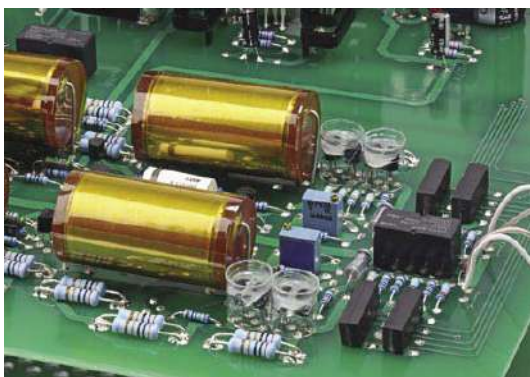
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FET pairs carefully potted into clear plastic containers on the input circuit board. These amplify the incoming cartridge signal. Four pairs above board, two pairs below.

Interestingly, after a while I realised there were no ticks and pops. Classical music enthusiasts have traditionally excoriated LP for this, flocking to CD (only to be met by digital distortion!). The PH9 has a vast overload ceiling and shrugged off these irritations, leaving me undistracted. OK, older LPs I played did have 'em, but they did not intrude. There was no audible hiss from the speakers at high volume and when up close, but at full volume slight hiss was apparent.

As the LPs slid by the PH9 showed itself to

6H30P tubes made in Russia by Sovtek, likely supplied by Mike Mathews New Sensor Corporation of New York, who distribute Russian tubes.



be speedy and succinct, deeply insightful but without imposition.

If one track sounded muddled, the next was not: it clearly identified differences. I was left listening to the LP I felt, rather than the preamp. Not to say that this was always "nice": not glossing over blemishes can have its own challenges. Plenty of my beloved 'hi-fi' LPs from the past don't sound so good nowadays!

In terms of overall balance

the PH9 is neither warm nor bass heavy, rather it is dry and tight. This was very obvious with the rolling drum work in Sing Sing Sing, from the Syd Lawrence Orchestra on their LP Big Band Spectacular. Again I heard a wide and open sound stage and low disc surface noise, accompanied by vivid insight into the brass section in particular.

CONCLUSION

An internally complex and unusual 'tube phono stage', the

PH9 from Audio Research offers an esoteric listening experience from LP like no other. It's big, bulky and expensive but honed to provide high-end sound quality without compromise. The amalgam of transistor and tube circuits inside come from high fidelity's inner thought processes on what is right for top LP sound quality and certainly deliver the goods. It needs a good accompanying preamplifier to make up for low MC gain, as well as control volume – but then provides a sound from LP difficult to find elsewhere.



The rear panel carries just one pair of phono-socket inputs and outputs. They are internally connected to chassis earth a continuity test showed, making this an unbalanced input.

MEASURED PERFORMANCE

The PH9 applies the same gain of x583 (55dB) to both MM and MC. This is very high for MM, x100 (40dB) or so being common, whilst it is low for MC where x1000 (60dB) is common. There is no way to change gain, such as a volume control or gain pre-sets. Only the input load value can be changed, otherwise

MM and MC run through the same amplifying and equalisation channel unaltered. With MC volume will have to be turned up in an accompanying (pre)amplifier and with MM it will need to be turned down.

RIAA equalisation was accurate, frequency response measuring flat from a very low 3Hz up to 20kHz, as our analysis shows. There is no warp filter so full gain is applied to warps around 5Hz, resulting in loudspeaker cone flap with warped LPs.

Because they run at high voltages valves can give enormous output swings and this was the case here, 50V maximum output giving a high input overload value of 86mV for MM and MC.

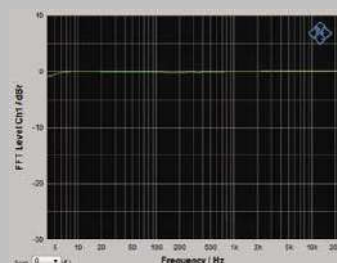
Input noise measured 0.17µV which is low, if above the 0.08µV possible.

The PH9's fixed gain value is not ideal for MM or MC, but it is accurate in equalisation and of low noise. The use of tubes gives a massive overload ceiling.

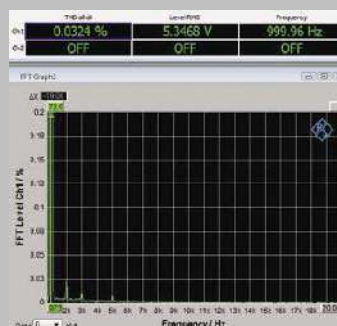
NK

PHONO MM & MC
Frequency response 3Hz-20kHz
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Gain x583 (55dB)
Noise -76dBV
Overload 50V out

FREQUENCY RESPONSE



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FOR

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AL STEWART

YEAR OF THE CAT ESOTERIC

With a name like that it should be no surprise to learn that the man hailed from Scotland (Glasgow, specifically) and was - despite his later soft rock achievements during the seventies - a folkie back in the sixties, inspired by skiffle.

Raised in Dorset, England, he bought his first guitar while attending college from no less a person than Andy Summers - later of the band The Police. No mean guitarist himself, it has to be said.

It wasn't long though that Stewart swapped electric for acoustic, entered the folk underground in England and played in London venues to anyone who would listen - while living in a flat with Paul Simon and hanging out in cafes with the likes of Roy Harper and Bert Jansch.

Stewart signed up to Decca for a single release - 'The Elf' - in 1966 and 'Bedsitter Images' in 1967, his debut album. His 1969 follow up 'Love Chronicles' featured luminaries such as Jimmy Page and Richard Thompson. It was also one of the first albums to freely use the F-word. Causing a mild sensation in the process.

More albums followed in 1970, 1972, 1973 and 1975. After which he then signed for RCA. This is when 'Year of the Cat' emerged.

I have catalogued this history, Stewart's litany of star contacts and colleagues, his already impressive list of albums and music industry experience to illustrate that 'Year of the Cat' didn't just appear, as if by magic on the music scene, fully formed and ready to fly. This was an album hewn and formed over many years.

Released in the USA, the title track was a top ten hit. It also did well in the UK. The album was a rather opulent soft rock opus. The result of Stewart honing his craft over many years.

'Year of the Cat' was the sound of Stewart perfecting his art. Part of the reason for its popularity was its inherent melodicism and its uplifting presentation. It made you feel good. You felt cuddled after listening to it. The lyrical narratives were also engaging, with plenty of imagery weaved in and out of a folk, pop-like, approachable rock sound.

This almost inner music effect, a slightly detached aspect to Stewart's delivery is enhanced by the man's vocal presentation. How do I put this? Well, Stewart is no Pavarotti. He has little or no power in his voice which, when dealing in his own works, is never an issue. On the contrary, his delivery has an almost Dear Diary aspect. As if you're overhearing him, as he sits on the cliff edge, staring out to sea, thinking out loud. It's relaxing and quite endearing.

As for the album title? It relates to Vietnamese astrology. A time that arrives every twelve years. When it does appear, that year is supposed to be pretty stress free. Which reflects the tone of the album perfectly. Co-written with Peter Wood, "I had a girlfriend at the time who had a book of Vietnamese astrology" said Stewart "and it was open at a chapter called The Year of the Cat. So then I had the title".

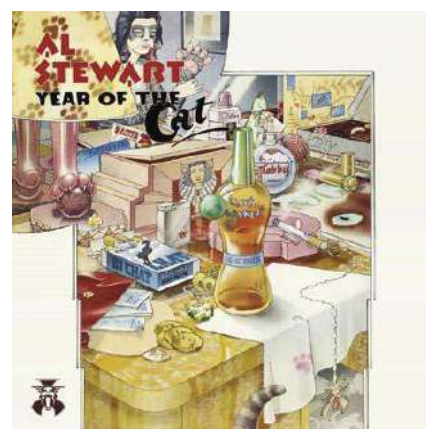
As this is the 45th anniversary year for the album's release, the Esoteric Recordings label has also reissued the album as a rather nice box set.

Inside the nicely designed and sturdy slip case you will find three CDs and a DVD. The music has been remastered by original producer and engineer Alan Parsons, using the original master tapes.

The content includes the original album with the addition of a new mix of 'Belsize Blues', an outtake from the original sessions. You also get a pair of CDs including a previously unreleased Seattle, USA concert from October 1976.

Parsons presents a DVD full of a new 5.1 surround sound mix and a hi-res version of the new remaster. Also in the slipcase is a 68 page book including an interview with Al Stewart, four postcards and a replica poster.

After the final mixing of the album, Stewart brought it back to his home, then situated in Hollywood, and played it on his own hi-fi system: "...it's one thing to listen to a record in a studio because everything sounds great through big speakers" said Stewart, "but I wanted to listen to it through tiny little speakers. I remember putting it on at nine in the morning and after an hour, I thought this sounds pretty damn good and I went to sleep". **PR**



"this book of Vietnamese astrology was open at a chapter called The Year of the Cat. So then I had the title".

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Three to see?

Three from Paul Rigby: the sixties legends Love, a drum & bass history and the “ranting” poet himself, Attila The Stockbroker.

An insider's view of the sixties' band Love, I initially thought band drummer Michael Stuart Ware's book was a vanity project. The physical book feels like an amateur production.

The content is a different matter, though. It hits the ground running pre-Love, during his time with the Sons of Adam. Chance encounters with Glenn Campbell and Kim Fowley illustrate the abundant creativity of the time.

And then there was the encounter between the over-confident, drunken cowboy and the band's rather fey bass player, Mike Port.

“You can't leave yet, little girl” said the cowboy. Port had long hair. The description of the cowboy's subsequent slow, methodical, physical destruction, jab by bloody jab, is harrowing. The cowboy was a bloody mess. Port, a trained boxer, was untouched.

Ware describes all of this in a simple, straightforward and appealing manner.

His time with Love is a roller coaster. From the pathetic attempt to remove themselves from their Elektra contract to comically missing a formal ‘keys to the city’ ceremony at an airport because they had missed their flight, the time lead singer Arthur Lee beat up his drug pusher in full public view, the time the guitarist changed the band's sound because he couldn't be bothered to carry a small yet important guitar effects pedal on tour and then the time the group were on stage, behind the curtain, noisy audience eagerly waiting, guy out front announcing the band, Arthur Lee raising his arm to count the band into their first number. And then. Only then did they realise the guitar player was missing. He was asleep in the hotel.

Brilliant book. Well written.

Renegade Snares? A broad-based history of drum & bass that

packs in a lot. The names are here: Goldie, Roni Size, LTJ Bukem and the rest. There's plenty to like too: the Bristol scene, ambience in drum & bass, threats of commercialisation, sexism and more.

Irritations? Despite mentioning the famed Mentasm riff I felt that its originators, Joey Beltram and Mundo Muzique received short shrift and are cruelly missing from the index. If you can index a comedy TV series like ‘Are You Being Served’ regarding a novelty song release, then you can index Beltram and Mundo.

I would also have liked to have seen more on the avant wing of the genre. People like ex-Atari Teenage Riot, Shizuo for example.

The book feels ‘rushed’. It needed to be twice the size. Sometimes I felt I was reading a list of people and events, the language structure lost much of its discipline (the overuse of colloquialisms is fine for blogs and fanzines and interview quotes but my author/guide should stand apart from that) and mentioned hardware was too often glossed over without proper explanation.

A decent book. Could have been better.

Finally, punk poet, Attila The Stockbroker's (yes, he did spend time in the Stock Exchange as a clerk) new tome packs in a host of poems and song lyrics. Some of them humorous (‘Russians in the DHSS’ and ‘There's a Man Down Our Road Who's a Nazi’) while others are serious diatribes. The 1985 poem, ‘Video Nazi's’ attacking the proliferation of video nasties was wonderfully vitriolic while 2014's ‘Never Forget’ poignantly remembers the war between the miners and the then prime minister, Thatcher.

What got me about this splendid collection is how strong Attila's more recent material is – his eye and ear for a poetic verbal onslaught has lost none of its edge.

PR

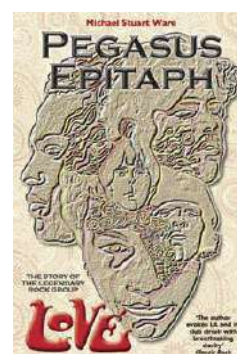
Title: Pegasus Epitaph: The Story of the Legendary Rock Group Love

Author: Michael Stuart Ware

Publisher: This Day in Music Books

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Pages: 209



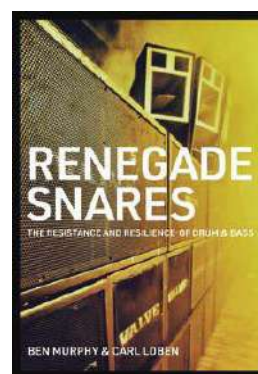
Title: Renegade Snares: The Resistance and Resilience of Drum & Bass

Author: Ben Murphy and Carl Loben

Publisher: Jawbone

Price: £14.80 (Amazon)

Pages: 336



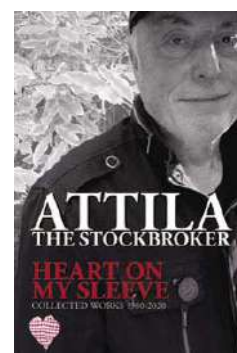
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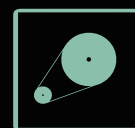
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DECEMBER 2021 ISSUE

CYRUS CDi XR

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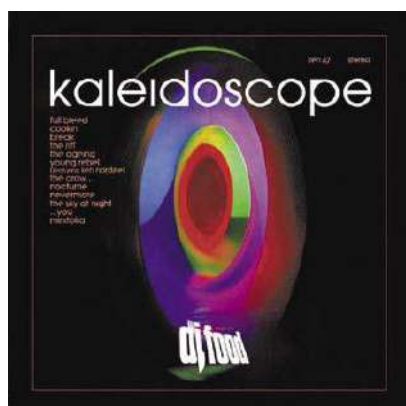
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DJ FOOD

KALEIDOSCOPE NINJA TUNE



"a scrapbook effect of disparate rhythms, samples, synth lines and bass variations to form a sherry trifle of musical wonder"

Back when I were a lad, it used to be called Trip Hop. That changed because Trip Hop was faintly embarrassing to the musicians themselves who never really liked it and tended to shift uneasily in their seats when the term was brought up in polite conversation. The term later transformed to beats or...something. But whatever fuzz logic term was eventually used (and labels arrived and departed with regularity, it seemed) the music behind it was and remains to me as I type these words, some of the most inventive, imaginative and sublime music ever to have tickled my ear drums.

The most successful purveyors of this stream of goodness has been DJ Food, a collaboration from the Ninja Tune stable of creatives.

DJ Food contains – or contained, rather – the Coldcut pairing of Matt Black and Jonathan More but also initially added two extra brains. And essential they were: those belonging to PC (Patrick Carpenter) and Strictly Kev (Kevin Foakes). The foursome were useful to create distance between DJ Food and the Coldcut project.

But there was more than that. As Strictly Kev explained to the Fat Hipster website (www.fathipster.net) "Matt and Jon (Coldcut) wanted to release music but were signed to a major label (Arista) under the name Coldcut. Frustrated by the slowness of the major label machine they decide to adopt another name and create a label to release it under, so Ninja Tune was born".

I have never heard a bad beat from DJ Food: their music remains sublime. It combines a suite of synth lines and bass beats but also weaves in plenty of jazz and inserts delicious samples in and around the melange, like the sweet bits in a raspberry ripple ice cream.

Initially, the DJ Food moniker was used by the Ninja Tune label to host a series of DJ-specific tools. Breaks, basically (actually termed 'Jazz Brakes' and then over five separate volumes). And very successful (and collectable, I might add) they were and still are. In fact, they are listenable in their own right, rather surprisingly.

Over time, the core group became rather

more elastic with the Coldcut pairing drifting away and concentrating more on just that. PC left completely at one point. Then Strictly Kev relaunched DJ Food as a solo project then, PC wandered back again and then guests were added and...well, you can see the fluidity of the project, I'm sure.

The first album-length, standalone project for the DJ Food monicker was 'A Recipe for Disaster' (1995) and a stunning album it was too. After that appeared, this album 'Kaleidoscope' a full five years later. Packed with jazz, samples from the likes of Quincy Jones and jazz poet, Ken Nordine plus glorious rhythms and melodies, it collected a range of work during that five year period into a resultant double album.

It included that whole cut and paste ethic thing, the oft-termed "scrapbook" effect of disparate rhythms, samples, synth lines and bass variations to form a sherry trifle of musical wonder. The album also played fast and loose with tempo, varied the mood from the humorous to the dramatic and yet managed to tie the lot into a coherent whole without ever hitting a brick wall or stalling to a juddering halt. This sometime stream of sonic consciousness managed to flow in an almost narrative fashion.

A new edition of the album has now been released, expanding the two discs to four and with coloured vinyl to boot. With lots of tweaking added for good measure. As Strictly Kev stated on the djfood.net website "The Crow features in two forms: Crow (Slow) and The Rook; Type 3–The Quadraplex EP has been remixed and edited into a new 13 minute epic that includes unreleased material. The keen-eared will recognise 'Stealth' as the backing for the Xen Cuts remix of 'The Ageing Young Rebel' although this is a different mix and 'Boohoo' is an early version of 'The Sky At Night'. All tracks on the companion were recorded around the time of Kaleidoscope".

As Kev has also added elsewhere "It's not a new DJ Food album, it's an old one that never was. In an alternate reality it might have become 'Kaleidoscope' but now, 20 years on, it's a companion to the original album".

Which is a roundabout way of saying that, even if you have the original edition, the reissue is well worth checking out. **PR**

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